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DIRECTOR OF AGRICULTURE FISHERIES AND FORESTRY

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BY THE

DIRECTOR OF

AGRICULTURE, FISHERIES & FORESTRY

FOR THE

FINANCIAL YEAR 1958 - 59

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EXCHANGE RATES

When dollars are quoted in this Report, they are, unless otherwise stated, Hong Kong dollars. The official rate for conversion to pound sterling is HK$16=£1 (HK$1=1s. 3d.). The official rate for conversion to U.S. dollars is HK$5.714=US$1 (based on £1=US$2.80).

Note: The weights and measures used in this Report are:

4.8 mows	=	1 acre
6 dou chung	=	1 acre
1 picul	=	133 lbs.
1 catty	=	1.33 lbs.
1 tael	=	1.33 oz.

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LIST OF SENIOR STAFF

Director	Mr. W. J. Blackie, M.Sc., F.R.I.C., F.N.Z.I.C.
Assistant Director	Mr. E. H. Nichols, B.Sc., Dip. Agri. (Cantab.) A.I.C.T.A. (Mr. N. F. Wright, I.S.O., M.B.E. acted until 8.3.59).
Senior Veterinary Officer	Mr. D. M. Corbett, M.R.C.V.S. (Mr. J. M. Riddell-Swan, B.Sc., M.R.C.V.S. acted from 26.10.58 for the remainder of the year).
Agricultural Officer	Mr. N. F. Wright, I.S.O., M.B.E.
Forestry Officer	Mr. A. F. Robertson, B.Sc.
Fisheries Officer	Mr. W. D. Orchard (Mr. Y. S. Yu, B.Sc. acted from 24.12.58 for the remainder of the year).
Soil Survey Officer	Mr. C. J. Grant, M.A.
Head of Credit Section	Mr. T. S. Woo, B.Sc.
Head of Agricultural Education and Information Section	Mr. S. Y. Chan, B.Sc.
Secretary/Accountant	Mr. A. Boyd-Cowan.

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PART 1

ADMINISTRATION AND GENERAL

POLICY

THE Agriculture, Fisheries and Forestry Department is concerned in assisting farmers and fishermen to produce the maximum amount of food possible for local consumption and advising them on the best methods to achieve this aim without impairing soil fertility and reducing the productivity of the fishing grounds available to the Colony. The afforestation of the bare and eroded hillsides and the catchments play a direct part in an overall policy of land utilization and in the conservation of soil and water.

2. Under approved policy advisory, educational, extension, regulatory, investigational and administrative services are provided and afforestation is undertaken directly by the Department. Emphasis is placed on the teaching and demonstration of diversification in farming and fishing as a means of improving the income and nutrition of small producers. The Department provides technical advice to the Kadoorie Agricultural Aid Association, assists welfare organizations in establishing refugees as farmers and assists also in Government resettlement projects. The Department administers the Kadoorie Agricultural Aid Loan Fund for farmers and the Mechanization Loan Fund for fishermen.

3. Although policy remained unchanged during the year administrative decisions taken towards the close of the period foreshadowed the stepping up of afforestation to 3,000 acres per annum and the expansion of deep sea fishing.

ORGANIZATION

4. The work of the Department is undertaken by four major and three minor divisions under the direction of Headquarters staff. There were no major changes in departmental organization during the year, but the administrative and co-ordinating functions of the Director were greatly strengthened by the appointment of an Assistant Director towards the close of the period. A list of senior staff may be found at the front of this Report.

PRODUCTION—SURVEY OF INDUSTRIES

A. AGRICULTURE

Paddy

5. A normal crop of paddy was harvested despite a dry spell (from late April to the middle of May) during the first crop paddy season and the appearance of leaf rollers, skippers and army worm insect pests and the occurrence of blast disease during the second crop period. The quantity harvested for both crops was estimated to be 545,628 piculs (33,000 metric tons) which on a milling percentage of 68% produced 22,440 metric tons of rice. At a price of $36 per picul for the first crop paddy and $45 per picul for the second crop paddy the value of the crop in round figures was estimated to be $22,271,000 i.e. approximately $4,000,000 higher than in the previous year.

6. Paddy production and money value of the crop over the past five years is recorded at Appendix 2 and production by districts at Appendix 3. Production in 1958 was the highest for the five-year period.

Vegetables

7. Conditions for vegetable farmers were more satisfactory than in the previous year. There were no floods or typhoons and the weather on the whole was favourable. The demand from the urban areas was steady and prices were reasonable. The increasing population of the Colony and the reduced competition from China have encouraged farmers to plant up more land to vegetables. Vegetables produced in the Colony and marketed through the Vegetable Marketing Organization amounted to 1,400,397.5 piculs an increase over the previous year of 169,732.4 piculs or about 12.2%. The total wholesale value was $29,370,238 or $6,872,053 more than for the previous year. The average price paid for vegetables was $20.97 per picul compared with $18.28 per picul for last year. The types of vegetables grown, quantities and value are shown at Appendix 4 with comparative figures for the previous year; production by districts is given at Appendix 5. There were large increases in the production of flowering cabbage, leaf mustard cabbage, Chinese kale, Chinese lettuce, winter spinach, string beans, Chinese chives and brinjal. Production of tomatoes dropped considerably but prices were higher.

Fruit

8. Harvests of locally grown fruits were below average. Yields of lychees in the early months of the year were estimated to be 8,300 piculs compared with 9,000 piculs in the previous years. Other fruits including

Japanese apricot, Wong Pei and Chinese olives suffered from heavy rains in spring when the fruit commenced to set. The higher rainfall however was advantageous to citrus in the drier areas.

9. There are about thirty kinds of fruits grown in the Colony and the annual value is now in the neighbourhood of $2,000,000. Fruit commands a good price with little fluctuation and there is considerable scope for expansion. Appendix 6 summarizes fruit production in the Colony for 1958.

Flowers

10. Reference has not been made previously in these reports to floriculture which is assuming greater importance in certain districts of the Colony particularly Sha Tin, Tai Po and the suburbs of Kowloon and Hong Kong. Flowers are cultivated both by specialists and by farmers on suitable soil types both in permanent flower beds and as a catch crop on appropriate soils between the rice seasons. In some areas such as Sha Tin, it has been found more profitable to grow flowers than vegetables.

11. Popular flowers are gladioli, dahlia, African daisy, zinnia, carnation and chrysanthemum. There is a growing demand in the urban areas for flowers and ornamental plants. Flower marketing is fairly well organized and growers sell their products in the flower market located in Boundary Street and retailers make their purchases between the hours of 4 a.m. and 6 a.m.

12. Prices on the whole were normal but losses were experienced by cultivators of blossom peach when the market was flooded by exports from China. The season was favourable for flower production. No certain information is available on the annual monetary return to growers but this is believed to exceed the returns from fruit growing. This industry is being investigated by the Department with a view to determining what assistance can be provided from technical staff.

Export Crops

13. There are small but important markets overseas for preserved dried or otherwise processed fruits and vegetables. At Appendix 7 there are listed twenty one separate items exported in the year under review with quantities and values; comparative figures for the previous year are also shown. Waterchestnut, ginger and lychees account for over 80% of the total value of the export estimated at $2,041,089.

B. ANIMAL INDUSTRIES

Pigs

14. During the early part of the year prices dropped as low as $145 - $150 per picul live weight for porkers and $1.50 per catty for weaners and the position was grim for New Territories farmers. However in December due to curtailment of supplies from China prices took an upward trend to a reasonable figure of $250 per picul live weight. This stimulated an increase in pig production and in particular in the number of breeding stock maintained. The price of pigs both wholesale and retail at various times throughout the year are shown at Appendix 15. Actual numbers passing through the slaughterhouses are known and the average weight is in excess of 65 catties. Based on these figures and on average ruling prices it is estimated that the value of pigs raised in the Colony and slaughtered for urban consumption was in excess of $36,780,000. To this must be added an estimated total of $4,106,000 raised and slaughtered by farmers for home consumption.

15. The number of pigs raised in the Colony and passed through licensed slaughterhouses was 313,099. This is a record and represents a 25% increase over the previous year. The total number of pigs which passed through slaughterhouses was 1,178,896 of which 28% was accounted for by local production (see Appendix 8).

Poultry

16. As with pig raising poultry farmers had a very lean time in the early part of the year but prices mounted steadily from December onwards and were as high as $11 per catty at Chinese New Year. These prices proved a great stimulus to the poultry industry but as has been pointed out in previous annual reports the main restriction on the ordered development of this industry is the lack of a regular supply of hatching eggs and day-old chicks. Although conditions are improving there are still insufficient breeding stock in the Colony and the industry is very dependent on imported hatching eggs.

17. The returns from this industry are difficult to establish with accuracy but a reasonable minimum figure can be calculated from census figures checked against the number of doses of Ranikhet Vaccine issued through the Department. In the year under review poultry production was estimated to be in excess of 2,200,000 birds. At a low average figure of $8 per bird a sum in excess of $17,600,000 was secured for the sale of 2,200,000 poultry.

Eggs

18. With restricted supplies of hatching eggs from China local prices mounted to 70 - 80 cents each and day-old chicks cost as much as $2 each. There are approximately 66,000 of the local Cantonese breed and 20,000 leghorn breed in the Colony. It is estimated that a total of 7,000,000 eggs were produced including 3,000,000 leghorn eggs at $3 per dozen, 2,000,000 local infertile eggs at $3 per dozen and 2,000,000 local fertile eggs at $8 per dozen. The returns from egg production were in excess of $2,583,000.

Cattle

19. A total number of 4,929 cattle were raised in the Colony and sold for slaughter compared with 3,596 for the previous year; this total included 344 dairy calves. The number of cattle in the Colony is not large but there has been a decided increase in numbers and improvement in quality over the past five years. The returns for the sale of local cattle exceeded $2,376,000. A record number of 132,915 cattle were imported for slaughter during the year (see Appendix 8).

Milk

20. From the twenty dairies in the Colony with a combined milking herd of 2,935 a total of 10,822,657 lbs. of milk was produced for local consumption. This production was a little lower than the previous year (10,971,425 lbs.). As reported in Part 3 of this Report an outbreak of Foot and Mouth Disease involved all the dairies in the Diamond Hill area and there was a sharp drop in production during the course of the disease although it was mild in nature. At $1 per lb. for milk the value of this production was $10,822,657.

Ducks

21. Ducks are raised in the wetter areas of the Colony and along the banks of streams. Production was mainly for home consumption but there was a limited export market for preserved ducks. There has been a considerable increase in duck raising over the past five years and prices are fairly stable. For the local market birds average about $2\frac{1}{2}$ catties and sell for $6 each. It is difficult to obtain exact information on the size of this trade but it is estimated that 700,000 birds were sold for a total return of $4,204,000. Certificates of origin were issued for a total number of 103,831 birds which were processed for export. The cost per bird for export was $18 bringing an overall return of approximately $1,868,000.

Duck Eggs

22. An increasing number of duck eggs are being produced locally. During the year it is estimated that 1,000,000 eggs were sold including 800,000 fertile eggs at $8 per dozen for hatching and 200,000 infertile eggs at $2 per dozen for eating. The total returns were in excess of $566,000.

Geese

23. This industry which is growing in importance brings good returns for the few farmers engaged in it. The average weight of a bird is four catties and each bird sells at $15 each. It is estimated that 53,000 birds were sold during the year for a return of approximately $795,000.

Geese Eggs

24. A conservative estimate of returns from geese eggs is $69,000 made up of 40,000 hatching eggs at $20 per dozen and 10,000 infertile eating eggs at $3 per dozen.

Pigeons

25. This small but important industry is in the hands of a few expert breeders who secure profitable returns for low production costs. Prices were a little lower than in the previous year. At an average price of $7 per pair of squabs and an estimated production of 48,000 pairs returns were in the neighbourhood of $336,000.

Quail

26. This industry which a few years ago was assuming importance in the Colony has declined rapidly as a result of the loss of overseas markets. Local production was estimated at 6,800 producing a return at $1 per bird of $6,800. In addition 800,000 quail eggs at $1 per dozen brought in a return of $66,600.

Miscellaneous Animal Products

27. A considerable quantity of hides, hair, tallow and other animal products are processed in the Colony for local use or export. A good deal of this material comes from imported slaughter stock but there are also large quantities imported for processing and re-export. The export value of these miscellaneous products certified by the Department was $7,401,801.

C. FISHERIES

Marine Fisheries

28. Weather conditions for fishing were quite good for both inshore and deep sea vessels except for short periods in the months of August and September 1958 and January 1959. There were six typhoon signals and sixteen strong monsoon signals during the year but the typhoons did not come close to the Colony.

29. The total quantity of fish landed for the year including fresh and salt/dried fish and shrimps was 736,928 piculs valued at $51,315,478 as compared with 804,244 piculs valued at $48,698,073 for the previous year. Excluding shrimps the comparative figures for fresh fish and salt/dried fish are 699,562 piculs valued at $43,777,000 for the current year and 775,175 piculs valued at $44,094,673 for the previous year.

30. The overall decrease of 8.4% (9.7% excluding shrimps) is due primarily to the reaction of fishermen to the new regulations promulgated by the Chinese Authorities regulating fishing in Chinese inshore waters. A further factor effecting fresh fish landings was the greater interest taken in shrimp fishing for lucrative overseas markets.

31. The price for fresh fish was poor in the first quarter of the year but improved considerably later. The average price of fresh fish was $75 per picul compared with $63 per picul for the previous year. The average price of salt/dried fish dropped slightly as compared with the previous year—from $43 per picul to $41 per picul.

32. Quantity, value and wholesale prices of fish landed during the thirteen years, 1946/47 to 1958/59, together with monthly figures for the year under review, are recorded at Appendix 9.

Minor Fisheries Products

(i) *Pond Fish*

33. The production of pond fish was lower than in the previous year owing to short supply of Grey Mullet fry for stocking purposes. About 5,000 piculs of fish valued at $1,450,000 were harvested compared with 8,400 piculs valued at $1,700,000 for the previous year. As supplies of pond fish from China decreased in quantity wholesale prices for local production of Big Head, Silver Carp, Grass Carp and Bream, Common Carp and Mud Carp increased by as much as $100 per picul in the last two quarters of the year.

Fish Fry Trade

34. Some twenty eight million carp fry were imported from China during the year of which 18,511,700 were re-exported by Hong Kong dealers compared with 15,085,000 for the previous year. Prices were slightly higher than in the previous season.

(ii) *Oysters*

35. There was a decrease in oyster production from the edible oyster beds of the Colony. Total production amounted to 15,211 piculs (905.4 tons) of fresh oyster meat valued at approximately $1,500,000; comparative figures for the previous year were 25,101 piculs (1,491.1 tons) valued at $1,750,000. The decrease in production was mainly due to the high salinity of the water in the lower part of the beds. This adverse environment was a result of a restricted rainfall in the first part of the year and caused some mortality.

36. The 15,211 piculs of oyster harvested were disposed of as follows:

TABLE 1

Oyster Product	*Fresh Oyster Meat (Piculs)*		*Dried Oyster (Piculs)*		*Oyster Juice (Piculs)*	
1958/59	*Estimated Local consumption*	*For Processing*	*Estimated Local consumption*	*Export to U.S.A.*	*Estimated Local consumption*	*Export to U.S.A.*
1/4/58 to 31/3/59	2,400	12,811	1,018	436	400	980
Total Production	15,211 (905.4 tons)		1,454 (86.5 tons)		1,380 (82.2 tons)	
Approximate Value	HK$1,500,000					

37. Prices obtained by producers for fresh oyster meat, and by processors for oyster products, were higher than during the previous year. Details are recorded in the following table:

TABLE 2

Oyster Product	*Price (HK$) per picul (133 lbs.)* *1957/58*	*1958/59*	*Comparison*
Fresh Oyster Meat ...	$ 70 to $ 100	$ 80 to $ 110	Dearer
Dried Oyster	$900 to $1,400	$900 to $1,800	Much dearer
Oyster Juice	$450 to $ 520	$420 to $ 540	Little change

Certificates of Origin

38. The following produce was certified as of local origin for export to America:

(*a*) *Oyster Products*

39. 436 piculs (26.0 tons) of dried oyster valued at $523,000 plus 980 piculs (58.3 tons) of oyster juice valued at $490,000.

(*b*) *Silver Shrimp*

40. 505 piculs (30.0 tons) of Silver Shrimp, valued at $32,472 for conversion into shrimp paste and sauce.

(*c*) *Spotted Fish*

41. 424 piculs (25.2 tons) of Spotted Fish—i.e. the brackish water Walking Goby (Boleophthalmus chinensis)—valued at $107,310 for canning.

(*d*) *Fresh Shrimp*

42. Ninety piculs (5.4 tons) of fresh shrimp, valued at $21,604 for conversion into shrimp slices and noodles.

43. The following produce was certified for export to the United Kingdom under Imperial Preference Certificates:

(*a*) *Oyster Products*

44. Sixteen piculs (0.96 tons) of oyster juice, valued at $8,000.

(*b*) *Silver Shrimp*

45. Seventy five piculs (4.5 tons) of Silver Shrimp, valued at $5,734 for conversion into shrimp sauce and paste.

(*c*) *Fresh Shrimp*

46. 157 piculs (9.3 tons) of fresh shrimp, valued at $39,570 for conversion into shrimp slices and noodles.

D. FOREST PRODUCTS

47. The sale of fifty five decayed or over mature camphor trees and ten large pine trees brought a return of $46,000 to villagers. In addition permits were issued to fell firewood in Forestry Lots and in protected areas which realized $377,000.

E. SUMMARY OF PRIMARY PRODUCTION

48. At Appendix 10 the estimated value of farm, fish and forestry products are recorded in tabular form. Accurate statistics exist for vegetables and marine fish in the records of the Fish and Vegetable Marketing Organizations, for livestock passing through registered slaughterhouses and for milk produced in dairies. The value of the rice crop can be assessed with some accuracy and the figures for export crops and other foodstuffs requiring certificates of origin are reliable. Difficulty is experienced in arriving at a true figure for poultry and the other livestock products recorded in this survey. It is believed however that the methods used in arriving at an assessment which include (i) departmental

census figures available, (ii) information from producers, (iii) areas of land involved in crops and yield data, (iv) data from special surveys and (v) analysis of prices, etc. give a reasonable measure of the value of primary production with which the Department is concerned.

49. The production for 1958/59 was valued at $226,702,000 which is considerably higher than that recorded in previous years. Not only were there greater quantities of rice and vegetables available for sale but in the case of the latter higher average prices were obtained. Fish quantities were down slightly with the exception of fresh shrimps which reached a new high record of 37,336 piculs valued at $7,638,000. Average prices for fish were higher than in the previous year. Livestock products with the impressive total of $91,438,000 accounted for 40% of returns. In particular both the quantities produced and prices received for pigs, poultry, ducks were higher than in previous years. Pigs are bred in the Colony from local improved stock; weaners are not now imported for fattening as was the practice several years ago. Ducks, poultry and geese are being raised in greater numbers and it is interesting to record that with shortages of hatching eggs from China local breeding stock met a large percentage of the demand. In fact farmers are now more interested in maintaining their own breeding stock for hatching eggs.

FINANCIAL ASSISTANCE TO PRIMARY PRODUCERS

50. The Department operates two loan funds for the benefit of farmers and fishermen.

(i) *Kadoorie Agricultural Aid (Loan) Fund*

51. This Fund was established in July 1955 under Ordinance No. 25 of 1955. It was originally limited to $500,000 contributed in equal amounts of $250,000 by Mr. Lawrence Kadoorie and Mr. Horace Kadoorie and by Government. Subsequently in 1957 it was increased to $1,250,000 by a further grant by Government of $750,000.

52. The Fund is under the control of a Committee, the Director being Chairman of the Committee and also Trustee of the Fund. The field work of investigation was originally undertaken by the Extension Services but in August 1958 five additional officers were appointed for these special duties. The field team now comprises one Senior Assistant Agricultural Officer (in charge), one Assistant Agricultural Officer and five Supervisors. Accounting and other financial duties are undertaken by the head office accounting service under the Chief Executive Officer

who is also Secretary of the Committee. Apart from loan fund activities this special group co-operates with other officers of the Department in bringing Kadoorie Agricultural Aid Association assistance to farmers.

53. From the commencement of operation of the Kadoorie Agricultural Aid (Loan) Fund in 1956 until 31/3/59 a total of 15,230 applications from farmers for a total amount of $3,543,710.64 were considered by the Committee; 11,092 loans were approved and a sum of $1,638,244.84 was issued. A total of 7,937 loans amounting to $744,520.37 have been repaid in full.

54. Loans are issued free of interest for a variety of purposes including purchase of livestock, livestock feed, fertilizers, insecticides, seed, planting material, fish fry, agricultural implements and other appliances. Loans are also issued to purchase land, for land development and the construction of fish ponds. Loans average $150 and do not normally exceed $2,000. The period of repayment varies from six months to a maximum of two years.

55. The Loan Fund gives considerable help to farmers but there is still a large dependence on private borrowing at high interest rates. It is hoped that the Fund will in time reduce the need for recourse to private borrowing and help to reduce interest charges to a lower level.

56. Under present conditions a maximum of $500 can be safely loaned to small farmers. Loans are not secured; the borrowers' honesty and industry are regarded as being more important. At times (as is customary with farming) problems of weather, diseases in livestock and crops make it difficult for the small man farming an acre or two to repay short term loans on time. The experience of the Credit Team has been that farmers who have had a difficult time never repudiate their debt but invariably seek an extension of time for repayment.

(ii) *The Colonial Development and Welfare Loan Fund for Mechanization of Sailing Junks*

57. A loan of $800,000 from Colonial Development and Welfare sources was made available by the United Kingdom Government in 1953 to enable a local revolving fund to be created for the purpose of making loans to inshore fishermen for the mechanization of fishing junks. Repayment of the loan to the United Kingdom commenced in 1958 and will be completed in five years.

58. During the period under review, three fishermen received loans and nine cleared their outstanding balance. Twenty two fishermen had

their repayment period extended for varying periods of from three months to one year. Loan repayments during the year amounted to $97,699 and the total outstanding as at 31st March, 1959 was $116,090.33. Altogether 123 fishermen have received loans under the scheme since its inception.

Kadoorie Agricultural Aid Association

59. This scheme of financial aid to farmers of the New Territories came into being in 1951 and in 1953 it was officially associated with the Department for technical guidance and assistance.

60. This Association is controlled by a Committee comprising Mr. Lawrence Kadoorie and Mr. Horace Kadoorie (who are the financial sponsors), the Director of Agriculture, Fisheries and Forestry, the Senior Veterinary Officer, the Agricultural Officer and the Senior Assistant Agricultural Officer (Credit).

61. The object of the Association is to give financial support to approved schemes of agricultural development under the general guidance of departmental staff. In addition, direct assistance is also given to individual farmers in the New Territories including refugees endeavouring to establish themselves.

62. Details of the work of the Committee are published in the special report of the Association. Briefly, during the year under review departmental staff gave technical assistance and advice and in many cases directly supervised the following:

(*a*) the distribution of 45,210 bags of cement (about 2,261 tons) for the construction of roads, paths, channels, dams, bridges, wells, piers, river embankments, small reservoirs, retaining walls, sea walls, pigsties and other farm buildings;

(*b*) the operation of six pumps during dry spells to irrigate 734 dau chung of nurseries and supply water to several fish ponds;

(*c*) the maintenance of sixty village orchards including the issue of fifteen tons of fertilizer and sixty gallons of concentrated spraying material;

(*d*) the purchase of 990 cattle, 5,377 head of poultry and 1,851 pigs; their inoculation against disease; and the establishment of 1,146 pigsties;

(*e*) the establishment of the Kadoorie Farm at Pak Ngau Shek for the supply of pigs, poultry and planting material for extension work.

63. The Livestock Improvement Plan which is a large extension project involving some 2,000 livestock raisers is referred to in the Report of the Animal Industries Division (Part 3). This plan is not only concerned with the development of pig and poultry raising by the individuals concerned but generally is an educational plan directed to improvements in animal husbandry by visual demonstration under the guidance of the Animal Industries Division using stock and management methods advocated by the Department. This project is greatly assisting the raising of standards of breeding, feeding and management of stock.

SURVEY OF DEPARTMENTAL SERVICES

64. The Soil Survey is nearing completion and the Department now possesses the basic data which will enable it to deal with land utilization in a more scientific manner and, also, with a truer understanding of soil types, be in a better position to undertake investigational work, the results of which can be demonstrated and extended with confidence. Already important steps have been taken on several rice soil types to determine the specific fertilizer requirements of rice; this work is referred to in the Report of the Agricultural Division (Part 2).

65. Despite the loss of some paddy land, rice production has been increasing year by year. Over the past six years the Department has concentrated on this crop paying particular attention to varieties disease resistance, fertilizer requirements, planting techniques, seed selection, pest control. On the extension side educational demonstrations have been laid down with farmer co-operators, loan funds have been made available for seeds, fertilizers and insecticides and active steps have been taken in co-operation with other Government Departments and the Kadoorie Agricultural Aid Association to extend irrigation and water storage. On departmental stations paddy yields for the season are approaching 6,000 lbs. per acre per annum; farmer co-operators have secured in certain areas 5,600 lbs. Five years ago yields of thirty six piculs per acre per annum (4,788 lbs.) were considered good with average yields of 3,000 lbs. With steady extension work rice farmers can look to at least a 30% increase on the yields of five years ago.

66. Vegetable production has been increased not only by the opening up of marginal land and the use of abandoned paddy land but also (through the teachings of the Department) the extension of catch cropping by rice farmers. The testing of new varieties, fertilizer requirements and the trial of new insecticides have also had a measurable effect

in increased vegetable production. Work of considerable importance to further extensions of this industry are referred to in the Report of the Agricultural Division (Part 2) dealing with the high altitude stations of Tai Mo Shan and Pak Ngau Shek. Of equal importance in vegetable culture has been the work of Extension Services of the Department in co-operation with the Kadoorie Agricultural Aid Association in the provision of paths and roads (to facilitate transport of vegetables to main collecting centres) and wells, water sumps and pumps during dry spells. Through Extension Services large numbers of sprayers have been distributed and spraying techniques demonstrated.

67. The establishment of a separate Animal Industries Division including professional Veterinary staff has had an outstanding effect in the phenomenal development of livestock industries which in the year under review grossed the impressive total return of $91,438,000. Organized services both field and laboratory have brought the problems of the industry under closer control and the provision of regular vaccines supplies at reasonable prices have had a marked effect in the control of major diseases. Swine Fever and Newcastle Disease of poultry are under effective control and in time these major diseases will be reduced to minor proportions. Tuberculosis in cattle has been virtually eliminated and again it can be recorded that the Colony was free from Rinderpest and Rabies. Other diseases of economic importance are being carefully studied and the best advice possible is being provided through Extension Services. Foot and Mouth Disease of cattle has been contained and by effective quarantine measures the disease which is mild in cattle has had no serious effect on the pig population.

68. In connexion with quarantine the Division has given considerable assistance to the new Australian cattle venture established on Lantao and has been engaged in the planning of the new cattle yards which will be built at Tai Lam.

69. Apart from disease control the Division has played a leading part in improving animal husbandry. Reference is made at Part 3 to the Livestock Improvement Plan but of equal importance has been the co-operative work with Extension Services in the association of livestock raising with cropping. With the building up of staff attention is being directed to experimental work on breeding (including artificial insemination in pigs) and feeding.

70. The fishing industry of the Colony has had strong support from the Fisheries Division particularly in the mechanization of inshore

fishing craft and in the training schemes for skippers, coxswains and engineers. Some operational research work has been undertaken in net making, shrimp trawling and otter board trawling but work has been confined to the inshore areas. New developments including the provision of deep sea vessels will extend the range, and the activities of the Division working in co-operation with the Fisheries Research Unit.

71. Slow but steady expansion of pond fisheries is taking place in the New Territories but these developments are dependent on educational and general extension work centred around the Government fish ponds which have been established at Au Tau. The operation of the Co-operative Society Fish Pond at Luk Keng has greatly improved following training and general supervision over a six-month period by a fisheries field officer. New techniques of oyster culture at Deep Bay have been demonstrated by the Division which lead to a better utilization of cultivation areas and more rapid growth of oysters. Certain technical problems are being overcome and at the close of the year a plan of development involving fifty oyster farmers was under consideration. A good deal of time and thought were given to problems concerned with the development of the new pearl culture industry.

72. The Forestry Division continued to extend plantings of approved tree species in the main and secondary catchments and in association with New Territories villages increased the area under Forestry Lots. Since Policy was approved in 1953, 6,230 acres of new Government plantations have been established and 1,676 acres of Forestry Lots. Soil and water conservation by planting tree species in appropriate locations outside the agricultural areas and the provision of firewood and poles for village use has been the principal aim of the Division.

73. At the close of the five-year period however and in view of the growing demand for firewood and shortage of supplies from normal sources careful consideration is being given to an expansion of afforestation as a direct economic venture to supply in time a greater proportion of our firewood supplies. The demand on land for agriculture and livestock raising must be given careful consideration and moreover more scientific studies are needed before afforestation schemes which are costly in the initial stages can be recommended with confidence. On existing information it is believed that 60,000 acres mainly in catchment areas are capable of afforestation. During the year the scientific services of the Division were strengthened and a programme of research laid down.

In the 1959/60 Estimates a new post of Assistant Forestry Officer (Research) and a Senior Forestry Supervisor for Forestry Lot development were approved.

EDUCATION AND INFORMATION

74. Formal education is undertaken by the Department through the Skipper, Coxswains' and Engineering Classes conducted by the Fisheries Division and the Young Farmers' Training Scheme controlled by a Senior Assistant Agricultural Officer assisted by specialist officers from other Divisions. Informal education is provided by Extension Services of all Divisions on radio programmes, visits to stations, Tree Planting Week and the Agricultural Show.

(*a*) *Training of Fishermen*

75. The Division continued with its training programme designed to qualify fishermen as Skippers for British registered ships and as Coxswains and Engineers for the mechanized fishing vessels. In each case the training is in accord with the requirements of the Marine Department.

(i) *Skipper Classes*

The two candidates of the 7th Skipper Class, who had completed their course of instruction and failed the first examination in the previous year, were re-examined by the Marine Department and successfully obtained 'acting Trawler Master (Limited)' endorsements to their Coxswains' Certificates. The 8th Skipper Class was organized in December 1957 and completed in June 1958. Only one of the three candidates passed the examination in the first attempt. The other two candidates were then re-examined in July and December respectively, and passed their examinations.

(ii) *Coxswains' Classes*

Nine classes, involving 106 fishermen, were organized during the year. These were held at Aberdeen, Cheung Chau, Tai Po and Kowloon. Including candidates who had been trained during the previous year but were not examined until after the 31st March, 1958, the number that passed the Marine Department examinations was 138 of which thirteen obtained the 'Full' certificates for mechanized vessels of up to sixty tons net, while the remaining 125 candidates obtained 'Modified' certificates for fishing craft of under 1,000 piculs capacity. In all, a total of 962 fishermen have received Coxswains' Certificates following departmental training, since the classes commenced.

(iii) *Engineering Classes*

A total of 130 fishermen trained by the Division have passed the examination of the Marine Department especially designed for fishing boats mechanized with diesel engines. These courses of training commenced in 1954 and seventeen classes have been organized. Thirty one further candidates awaited examination at the close of the period.

(*b*) *Young Farmers' Training Scheme*

76. Thirty seven candidates from twenty three villages were given training in two courses each of six weeks duration. The first group were enrolled from the Sheung Shui District and the second from Sha Tau Kok. As in the previous year the course was arranged on general lines and the officer in charge was assisted by subject matter specialists drawn from the staff of the Department. The programme of the courses, which have proved very popular, involves lectures in the mornings and practical work in the afternoons. Students receive a daily allowance of $3 for food and incidental expenses but usually return to their homes at night.

(*c*) *Radio Programmes*

77. A weekly programme for farmers has been broadcast over Radio Hong Kong (and more recently over Rediffusion) during the past two years and has become extremely popular with New Territories people. The programmes provide opportunities for discussion and instructive talks on topics of interest to the farming and fishing communities. In addition, information is given on market prices and trends and answers are given to questions raised which are of general interest to listeners. During the period under review talks were given as follows:

Agriculture (twenty seven)
Animal Industries (fourteen)
Fisheries (four)
Forestry (six)

78. Commencing in July, a second weekly Radio programme called the 'Happy Farmer Programme' was introduced by Radio Hong Kong in conjunction with the Department. These programmes, which are recorded directly in various parts of the New Territories, consist mainly of local folk songs, old Chinese operas, modern Chinese songs, story-telling, etc., but include also an agricultural quiz in which the villagers take part. This programme has also become very popular and thirty three broadcasts were made during the year.

(*d*) *Visits to Stations*

79. A total of 1,117 students from Grantham Training College, Northcote Training College and ten schools visited agricultural stations during the year. The teacher students of Grantham Training College are in the main being trained for teaching in Rural Schools. Apart from these, many overseas visitors and local farmers visited departmental stations. A total of 19,388 people saw agricultural films prepared by the Department at fifty three showings in eleven districts.

(*e*) *Agricultural Show*

80. The annual Agricultural Show was again held at Yuen Long Public School from the 17th to 19th January and attracted about 60,000 visitors from both rural and urban areas. There was a noticeable improvement in the quality of exhibits and the manner in which they were displayed. Fourteen local fish farmers competed in the pond fish classes.

81. As in previous years, educational exhibits were prepared by departmental officers under the general guidance of the Artist. A forestry exhibit, illustrating all the main branches of forestry was housed in a temporary structure using pine thinnings for the framework. Exhibits provided by the Fisheries Division included educational charts, models and live specimens of both marine and fresh water fish, and exhibits of pond fish were on display at the Divisional fish ponds at Au Tau. Exhibits covering the work of the Agricultural and Animal Industries Divisions dealt with improved cropping techniques, plant pest and disease control, land utilization, disease of livestock and animal husbandry.

(*f*) *Tree Planting Week*

82. In April the annual Tree Planting Week was held with the usual ceremonies at twelve centres in the Colony at which approximately 6,000 school-children and villagers attended. This year the campaign was carried to some of the remoter areas of the New Territories such as Kat O, Tsing Yi and Ma Wan Islands, Ta Kwu Ling and Sha Tau Kok. Much interest was shown by the local people.

LEGISLATION

83. The Department was concerned with revision of legislation effecting dairies, importation of livestock, keeping of animals in urban areas and protection of wild life. In consultation with the Legal Department

new legislation was in course of preparation on pearl culture control, forest reserves (and related matters of importance in forestry administration) and the dynamiting of fish.

CONFERENCES, COURSES, COMMITTEES, ETC.

84. The Fisheries Officer, Mr. W. D. Orchard, attended the Eighth Session of the Indo-Pacific Fisheries Council at Colombo, Ceylon.

85. The Veterinary Officer, Mr. J. M. Riddell-Swan, accompanied by an Agricultural Supervisor, Mr. K. C. Tsui, visited Japan to study artificial insemination of swine, and various problems relating to Animal Disease Control and Animal Husbandry.

86. The Senior Forestry Supervisor, Mr. R. J. V. Everest, underwent a course under the auspices of the Forestry and Timber Bureau of the Commonwealth of Australia in methods of detection and fire suppression in forest areas.

87. Two Senior Assistant Agricultural Officers, Mr. S. Y. Chan and Mr. L. F. Wong, attended an F.A.O. Training Course in Agricultural Extension Work at Los Banos, Philippines.

88. An Assistant Agricultural Officer, Mr. C. T. Wong, departed for a post-graduate course at the Imperial College of Tropical Agriculture, Trinidad, with a view to obtaining the D.T.A. (Trin.).

89. The Director of Agriculture, Fisheries and Forestry, Mr. W. J. Blackie, attended all meetings of the Rural Development Committee and the Fisheries Advisory Council of which both he and the Fisheries Officer are members. The Director, Mr. W. J. Blackie, as Chairman and Trustee of the Kadoorie Agricultural Aid Loan Fund presided at the fortnightly meeting of the Committee which include also the Agricultural Officer, Mr. N. F. Wright, the Senior Veterinary Officer, Mr. D. M. Corbett, and the Senior Assistant Agricultural Officer (Credit) Mr. T. S. Woo. The Director, the Senior Veterinary Officer, the Agricultural Officer and the Senior Assistant Agricultural Officer (Credit) are also members in a private capacity of the Kadoorie Agricultural Aid Association.

STAFF MOVEMENTS

90. Mr. E. H. Nichols, B.Sc. (Dunelm), Dip. Agric. (Cantab.), A.I.C.T.A., was appointed Assistant Director, on transfer from Sierra Leone, on 6th February, 1959. He arrived to take up his appointment on 9th March, 1959.

91. Mr. N. F. Wright, I.S.O., M.B.E., departed on vacation leave prior to retirement on 13th March, 1959.

92. Mr. D. M. Corbett, M.R.C.V.S., Senior Veterinary Officer, proceeded on vacation leave on 26th October, 1958.

93. Mr. R. J. V. Everest, Senior Forestry Supervisor, proceeded on vacation leave on 25th June, 1958.

94. Mr. A. Boyd-Cowan, Executive Officer Class I, assumed duty as Accountant/Secretary of the Department on 6th June, *vice* Mr. J. R. Heywood.

VISITORS TO THE DEPARTMENT

95. The following visited the Department during the year for discussions and tours, many being taken on conducted tours to the Departmental Agricultural, Fisheries and Forestry out-stations:

Mr. Joseph A. Becker, Director of Statistics, U.S. Dept. of Agriculture, Washington, D.C.

Mr. Colin Beever, F.A.O. (Economics Branch), Rome.

Dr. Lien-Fang Chao, University of Taiwan, Taipeh.

Mr. S. A. Naqir, Central Fisheries Dept., Government of Pakistan.

Mr. M. A. Hameid, Central Fisheries Dept., Government of Pakistan.

Mr. D. Rhind, Secretary for Colonial Agricultural Research, Colonial Office, London.

Mr. H. N. Mukerjee, Regional Soil Fertility Specialist for Asia and the Far East, F.A.O., Bangkok.

Mr. Aung Din, Regional Forestry Officer, F.A.O. Bangkok.

Prof. Glen Lehker, USOM c/o American Embassy, Karachi, Pakistan.

Mr. N. Parthasarathy, Regional Rice Improvement Specialist, F.A.O., Bangkok.

Dr. R. Irie, Chief of Animal Quarantine, Yokohama, Japan.

Mr. Valente Villegas, SEATO Research Fellow College, Laguna, Philippines.

Mr. G. A. Letts, Assistant Director of Veterinary Services, Darwin, Northern Territory, Australia.

Mr. Shuzen Okazaki, Managing Director, Central Association of Livestock Industry, Japan.

Mr. Keiji Yokochi, Chief Secretary, Central Association of Livestock Industry, Japan.

Mr. Osamu Kitamura, Director of Japan Bonded Feedstuff Factories Association.

Mr. Yoshiyuki Matsuo, Director of Japan Livestock Trading Association.

Mr. V. P. Naik, Minister of Agriculture, Bombay, India.

Mr. Cao-Thien Buu, Chief of the Direction of Fisheries, Vietnam.

Dr. C. W. Chang, F.A.O. Agricultural Adviser, Bangkok, Thailand.

Dr. Martin M. Kaplan, Chief, Veterinary Public Health Section, Geneva.

Mr. Tran-Van-Tri, Chief of the Water Resources, Director of Fisheries, Vietnam.

Dr. J. Takado, Faculty of Fisheries, Hokkaido University, Hokodate, Japan.

Mr. Hervey Rhodes, D.F.C., Member of Parliament, London.

Rt. Hon. R. H. Turton, M.C. Member of Parliament, London.

Mr. Alan Green, Member of Parliament, London.

Mr. Sydney Irving, Member of Parliament, London.

Rt. Hon. Lord Rea, O.B.E., Member of Parliament, London.

Mr. W. I. J. Wallace, C.M.G., O.B.E., Head of the Far Eastern Department, Colonial Office, London.

Dr. the Rt. Hon. Charles Hill, Chancellor of the Duchy of Lancaster, London.

Dr. A. Kostermans, Herbarium Bogoriense, Bogor, Indonesia.

Mr. C. V. Wayne, M.R.C.V.S., New Zealand House, London.

Mr. Quirino Gregorio and 13 others from the Philippine Bureau of Fisheries, Manila.

Mr. Noel Krauss, Entomologist, Board of Agriculture & Forestry, Honolulu 14.

Mr. Khushi Ram, Agronomist, Ministry of Food & Agriculture, Nilokheri, India.

Mr. J. H. S. Ponnayya, Principal & Development Officer, Madras State, India.

Dr. Wu Cho-Yuan, Professor, Agricultural Economic Dept., Taipeh.

Mr. T. F. Cheng, Veterinary Department, Fullerton Building, Singapore.

Mr. David H. Woodside, Board of Agriculture & Forestry, Honolulu T.H.

Mr. A. V. M. Musa, Director, Village Agricultural & Industrial Department Programme (Pakistan Civil Service) East Pakistan.

Mr. M. A. Khan, UNESCO Fellow, Supervisor Village Agricultural & Industrial Development Programme, West Pakistan.

Mr. Howard W. Ream, Joint Commission on Rural Reconstruction, Taiwan.

Mr. Douglas T. Franklin, Ministry of Agriculture, Ibadan, Nigeria.

Mr. Y. Miyake, Economics Branch, Fisheries Division, F.A.O. Rome.

Mr. C. S. Howroyd, Forestry Officer, North Borneo.

PART 2

AGRICULTURAL DIVISION

Officer-in-charge: Mr. N. F. Wright, I.S.O., M.B.E.—Agricultural Officer

96. The work of this Division is directed towards increasing the production and improving the economic status of individual farmers and assisting with the resources at its disposal in the improvement of the stability of the industry by encouragement of diversified production to mitigate the effects of market 'gluts' and trade recessions.

97. To achieve the above objectives the Division provides two distinct yet allied services (1) the *Extension and Advisory Service*, which maintains close and constant contact with and gives advice and assistance to the farmers of the territory and (2) the *Research and Investigation Service*, which introduces, evaluates and finally hands over to the Extension Service tested and approved planting material and techniques which will be beneficial to the farming community. This service also investigates, with the object of resolving, localized farming problems brought to notice by the Extension Service. Both services are independent and interdependent having as a common goal the objective of maximum effectiveness to assist the farming community.

98. As a natural corollary this Division is closely allied in work, both in the field and on the research stations, with the other Divisions of the Department. It is more especially concerned with the Animal Industries Division for the incorporation of livestock into the overall farming pattern, the Credit Section for the improvement of the economic background of individual farmers and the Forestry Division for the integration of orchard and fodder crop production into the Forestry Lot system.

EXTENSION AND ADVISORY SERVICES

99. For extension purposes the territory is divided into ten districts or 'circles' each served by an Agricultural Supervisor stationed at a departmental 'post'. In certain cases, for the sake of administrative convenience, these 'posts' are associated with a departmental substation although functioning separately. The ten circles are co-ordinated under Senior Extension Officers, North and South. The latter are of Senior Assistant Agricultural Officer status and also control Extension Services

common to all districts, e.g. the Pest Control Team, the Emergency Irrigation Team, etc. These officers work in close co-operation with the Senior Assistant Agricultural Officer concerned with the Kadoorie Agricultural Aid (Loan) Fund and the Senior Assistant Agricultural Officer in charge of Information and Education Services.

(i) *Improved Paddy Seed Distribution*

100. Improved seed resulting from variety trials, seed selection and multiplication on research stations were distributed by Extension Officers in accordance with plans to build up reputable high yielding strains in rice growing districts. It is hoped that in time the higher yields obtained on agricultural stations will also be attained by farmers. This build up of yield will be slow at the outset since seed multiplication areas available to the Department are limited. As more and more farmers take advantage of this service, progress will be accelerated. For the first crop 10,739 catties of seed of the varieties Fa Yiu Tsai, Early Sze Mui, Castle Peak No. 2, Kam Bau Ngan, Fa Loh Pak and Shek Kuk were saved for distribution; 12,345 catties of seed of the varieties Wong Huk Chai Mei, Kuk Tsai, Pak Huk Chai Mei, Sam Sin Kuk, Fall Crop Sze Mui, Tai Lor, Heung Keng Lor and Lo Shu Ngar were saved during the second crop period. Farmers purchase this seed from extension centres aided in many cases by loans from the Kadoorie Agricultural Aid (Loan) Fund.

(ii) *Paddy Production Demonstrations*

101. To educate the farmer on how to obtain better yields of paddy by approved practices the Extension Service uses the visual demonstration method with all operations performed by farmer co-operators under the guidance of field staff. Practices demonstrated include use of selected seed of varieties suitable to the districts, fertilizer treatment and cultural operations evolved from experimental work on agricultural stations. During the growing period insects are controlled by spraying with insecticides. All operations are conducted by methods familiar to the farmer.

102. For the two crop seasons nineteen demonstration plots were laid down in eleven rice growing districts. The variety Fa Yiu Tsai was employed for the first crop and Wong Huk Chai Mei for the second. Good yields were obtained in all districts not affected with Rice Blast Disease. In several cases yields were as high as 7.2 piculs per dau chung for two crops equivalent to 2.56 long tons of paddy per acre per annum. The average yield for all areas amounted to about two tons per acre per annum.

(iii) *Fertilizers for Paddy*

103. The value of artificial fertilizers as additions to traditional fertilizer procedures is well appreciated in Hong Kong as a means of improving rice yields. It is important however that the dressings are not excessive and that they are applied as directed and only when other cultural considerations such as adequate supplies of irrigation water are available. Peasant farmers may fail to obtain satisfactory results from the application of fertilizer simply because cultural conditions are inadequate or because of the adverse and unforeseen effect of pests and disease. In such cases, the farmer may well be discouraged and disheartened and a blow is struck at the overall plan for improved production through education. Extension Services therefore have the important task of advising farmers whether fertilizers should be used or not and if used how and when they should be applied.

104. During the two crop seasons 375,960 catties of balanced fertilizer at the rate of forty catties per dau chung were distributed from extension centres and applied to 9,399 dau chung of rice lands. The formula of the fertilizer (11.62% nitrogen: 8.8% P_2O_5: 4% K_2O) is based on departmental research work and costs $9.60 per dau chung. Loans from the Kadoorie Agricultural Aid (Loan) Fund were made available to purchase fertilizer, and the areas were closely watched during the growing season. Under normal conditions a minimum of $\frac{1}{2}$ picul up to a maximum of one picul per dau chung more of paddy is secured i.e. $18 to $45 per dau chung and at the same time the land is kept in good heart.

(iv) *Water Pumping Service*

105. During dry periods the emergency water pumping service organized by Extension Services using pumps provided by the Kadoorie Agricultural Aid Association was busily engaged (especially in Castle Peak and Ping Shan areas) in lifting water from streams, water sumps and pools for paddy, vegetables and fish ponds. A total of 242 dau chung of paddy land and nurseries during dry spells in April and May and 352 dau chung of vegetable fields at periods between November to January were irrigated and water was supplied to 127 dau chung of fish ponds. A total of 252 applications for assistance was received from sixty three villages and pumps were in operation for a period of 2,574 hours.

(v) *Crop Pests and Disease Control*

106. This service gave assistance to 317 farmers and visited 115 villages both for assistance and instruction. A total area of 2,538.6 dau

chung was sprayed and included 449.2 dau chung of orchards, 1,985.2 dau chung of paddy, 33.9 dau chung of vegetables and 70.3 dau chung of miscellaneous crops.

107. In addition to these normal duties the team was called in to deal with a serious outbreak of Leaf Roller Moths and Leaf Roller Skippers on the second paddy crop first discovered at Kau Lung Hang, Sha Tau Kok and Ta Kwu Ling. A serious calamity was averted by prompt action. Farmers were organized into teams under the control of extension staff and Government met half the cost of insecticides used. In this way 4,168 acres of land (involving 2,636 farmers of 252 villages) were sprayed. 161 Knapsack sprayers (many of them gifts to villagers by the Kadoorie Agricultural Aid Association) and 173 gallons of concentrated Endrin were used.

(vi) *Resettlement*

108. During the year, visits were made by officers of the Department to areas where refugee farmers had been settled with the assistance of Church Welfare Organizations. Particular attention was paid to areas of poor soil fertility such as Cheung Sheung, Nam Shan, Luk Wu, Siu Tong and Chek Lap Kok where the settlers had reached the end of the eighteen-month subsidy period granted by the Organizations. Assistance took the form of the supply of planting material and the giving of advice on various agricultural matters, and in certain cases loans were recommended. Progress has been particularly noticeable at Siu Tong. In the areas mentioned above, forty seven families (247 people) are at present cultivating 189 dau chung of land.

109. At San Shek Wan seventeen families (fifty four people) are cultivating fifty one dau chung of paddy and sixty seven dau chung of vegetables. These people the majority of whom were former employees of the company mining wolfram above Sha Lo Wan Village have settled on the area during recent years. Regular visits from the Extension Officer at Tung Chung Agricultural Post has led to improvements. They have been encouraged to grow fruit trees and seedlings of apricot have been distributed to them. They have also been advised to increase pig and poultry production.

110. Tai Long Wan. This area has been set aside for the resettlement of Fan Pui Village near Shek Pik Reservoir scheme. A plan of development was prepared by Extension Services.

(vii) *Extension Advisory Services*

111. Special advisory services as recorded below have been given by Extension Officers to villagers in different districts in connexion with insect control, orchard management, paddy and vegetable culture, layout of farms, irrigation problems and land development.

Place visited	*Advice given*
Tung Lung Island	On land development
Fui Tau Pun Chow, Sai Kung	On loan applications
Sunshine Island	On land utilization
Siu Tong San Tsuen, Sai Kung North	On farming technique
Tap Mun Island, Tai Po	On paddy demonstration
Wu Kwai Sha, Sha Tin	On general farming
Ma Shi Po, Fanling	On irrigation
Soko Islands	On insect control
Che Ha, Sai Kung North	On irrigation
San Shek Wan, Lantao	On fruit tree growing
Nim Shue Wan, Lantao	On use of fertilizer
Cheung Sheung, Sai Kung North	On loan applications and use of paddy fertilizer
Lamma Island, North & South	On planting of fruit trees
Tai Long Wan, Lantao	On land development
High Island, Sai Kung South	On general farming
Shui Lau Tso, Lantao	On use of fertilizers
Pui O, Lantao	On vegetable culture

RESEARCH AND INVESTIGATION SERVICES

112. Two major agricultural stations with four associated substations to increase environmental range deal with the general investigational and research work of the Division. In addition there are three more specialized substations, two dealing with specific environments,—namely the Dryland Research Station and the High Altitude Research Station—and the third restricted to investigations concerning citrus.

(i) *Castle Peak Agricultural Research Station*

113. Up to the end of the year this station continued to be the main research centre of the Department incorporating research facilities for the Animal Industries Division as well as for the Agricultural Division. Agricultural Research work undertaken at this station covers general agronomy and cultural techniques, rice varietal work, field and fodder crop work, fertilizer investigations on all crops, pest and disease control, and fruit crop investigations other than citrus. It is anticipated that with

the establishment sometime in 1959/60 of a Vaccine Laboratory, serving the joint needs of the Medical Department and Animal Industries Division of the Agriculture, Fisheries and Forestry Department the work of this station will be concentrated more on Livestock Research and that the other research work will gradually be transferred elsewhere.

(ii) *Sheung Shui Market Garden Research Station*

114. This major station concentrates on and co-ordinates all research work on market garden crops. Originally designated the 'Vegetable Research Station' the scope of work has been broadened to incorporate all aspects of market gardening, including floriculture.

(iii) *Dryland Research Station, Ta Kwu Ling*

115. This station is situated in a drier belt of country where the farming community are limited by environmental conditions in their enterprise and cropping. This station is examining the problems involved and investigating suitable methods of improving the local farming economy by the introduction of new crops and/or techniques.

(iv) *High Altitude Research Station, Tai Mo Shan*

116. Situated at 2,000 feet above sea-level this station is investigating the off-setting and mitigating of seasonal effects upon crops (due principally to the hot, humid summers) as well as the extending of environmental range of cropping for improved land utilization at high levels.

(v) *Citrus Research Station, Tai Po*

117. Originally a 'general' agricultural substation, with developments over the last year or so work on this station is now restricted to investigation and multiplication of citrus. As a crop requiring certain specific environmental conditions work on citrus must be carried out in areas in which these conditions obtain.

(vi) *General Investigational Substations*

118. The siting of these stations at Sha Tin, Sai Kung, Tung Chung and Silver Mine Bay is designed to afford opportunity for the specialist officers to determine local effects upon crop and vegetable varieties and agricultural techniques developed elsewhere. Opportunity is also given for investigations of local farming problems such as soil fertility, pests and diseases and the fitting of new ideas into the local farming pattern.

(A) PADDY INVESTIGATIONS

(i) *Multiplication of Stock Seed*

119. Stock seed of improved varieties were planted at Castle Peak to produce bulk seed for distribution to farmers. The variety Fa Loh Pak was outstanding during the first crop season and yielded 2,648 lbs. per acre. Good yields were also secured from Fa Yiu Tsai, Early Sze Mui, Kam Bau Ngan with average figures of 1,734 lbs. per acre.

120. In the second crop season the variety Sam Sin Kuk yielded 3,328 lbs. per acre and the varieties Kuk Tsai, Pak Huk Chai Mei and Fall Crop Sze Mui gave very similar yields averaging 2,752 lbs. per acre.

121. On the basis of these results Fa Loh Pak in the first season followed by Sam Sin Kuk in the second season gave yields of 2.76 long tons per acre per annum. The other varieties referred to above produced two long tons per acre per annum.

(ii) *Variety Trials*

First Crop (eighteen varieties; six randomised blocks each containing eighteen plots)

122. Fa Yiu Tsai which is a disease resistant variety and very popular for the first crop gave the highest yield in this season but there was little to choose between this and Shun Yee Pak, Castle Peak No. 4, Early Sze Mui and Chat Tam Chung—all are being multiplied for distribution.

Second Crop (six randomised blocks each containing twenty four plots)

123. Varieties Sang So Kuk, Hon Lo Chim, Pak Huk Chai Mei, Fall Crop Sze Mui, Lo Shu Ngar and Sam Sin Kuk yielded well and will be multiplied for distribution. Pak Huk Chai Mei, Fall Crop Sze Mui, Lo Shu Ngar and Sam Sin Kuk are resistant to blast. Hon Lo Chim can stand dry conditions. The glutinous rices Hung Lor, Heung Keng Lor, Wong Lor Tsai, Tai Lor and late maturing varieties Tai Woh Kuk, Ham Moon, Hung Tau Keng and Cha Tsai gave low yields.

Taiwan Rice Varieties

124. Seed samples received from the Joint Commission on Rural Reconstruction Taiwan on the advice of the Regional Rice Officer (F.A.O.) were planted out on Tai Po Agricultural Station. The samples comprised four Japonica types namely Taichung 65, Chia-nung-yu 242, Kwanfu 1, Chianan No. 8 and two Taiwan native indica types namely Pei-mi-fun and Mingtang. From Taiwan information the Japonica types

do well in both crop seasons but of the indica types Pei-mi-fun did better in the first crop season and Mingtang in the second crop.

125. All varieties with the exception of Mingtang (which did not flower) did well in the first crop season and seed was saved; in the second crop season all were stunted with the exception of Mingtang which did well.

(iii) *Interaction between Varieties and Fertilizers*

126. Previous research has shown that paddy responds to nitrogen fertilizers and that phosphorus and potash did not produce marked responses. It was also determined that heavy applications of nitrogen tended to increase blast infection, lodging and excessive vegetative growth. It was considered desirable to test out varieties with fertilizers to determine the conditions for highest yields without introducing undesirable interaction.

127. The experiment was conducted at Castle Peak for both crop seasons and at Sai Kung and Sha Tin Agricultural Stations with different layouts for the second crop season. The design was of the split plot type with four main-fertilizer-treatments and ten sub-variety-treatments; size of main plot 10′ × 25′; size of sub-plot 2.5′ × 10′. Owing to lack of suitable fields at Sai Kung only four replications were possible.

128. Fertilizer treatments were: no nitrogen (control); 30 lbs. nitrogen per acre; 60 lbs. nitrogen per acre; 90 lbs. nitrogen per acre, in the form of Ammonium Sulphate. Standard amounts of 30 lbs. of P_2O_5 as Superphosphate and 15 lbs. of K_2O as Muriate of Potash were added to each plot.

Results

129. *Castle Peak: 1st Crop 1958.* The ten varieties tested gave marked responses to nitrogen up to 90 lbs. per acre. The variety Kam Bau Ngan produced the highest yield and Chat Tam Chung made the greatest increase of 76% in yield of paddy compared with control. The early maturing varieties namely Early Sze Mui and Chan Chu Cho and the mid early maturing variety Castle Peak No. 2 gave increasing yields with fertilizer application up to 60 lbs. per acre.

130. *Castle Peak: 2nd Crop 1958.* Application of 60 lbs. of nitrogen per acre appeared to be beneficial; larger applications were either wasteful or in some cases appeared to be actually harmful. The variety Sam Sin Kuk gave the highest yield and made the greatest increase in yield (31%) as compared with the control. In the seed multiplication

plot Sam Sin Kuk gave a yield of 3,328 lbs. per acre reaped from 2.13 dau chung of land.

131. *Sha Tin and Sai Kung: 2nd Crop.* In general similar results were obtained on Sha Tin soils as at Castle Peak. Nitrogen was required in small quantities only for 2nd crop varieties at Sai Kung. The varieties Kuk Tsai and Hon Lo Chim gave no responses to the treatments.

(iv) *Effect of Continuous Applications of Ammonium Sulphate on Paddy*

132. In this preliminary trial nitrogen in the form of Urea and Ammonium Sulphate was applied to paddy at Castle Peak (where Ammonium Sulphate has been used continuously since 1950) and on a farming area at Sheung Shui Wai where no Ammonium Sulphate has been used.

133. The experiment was set out in five randomised blocks each containing six plots. The treatments were: Urea at 40 lbs. nitrogen per acre; Ammonium Sulphate at 40 lbs. nitrogen per acre; Urea and bone meal at 40 lbs. nitrogen and 30 lbs. P_2O_5 per acre; Urea and Superphosphate at 40 lbs. nitrogen and 30 lbs. P_2O_5 per acre; Ammonium Sulphate and bone meal at 40 lbs. nitrogen and 30 lbs. P_2O_5 per acre; Ammonium Sulphate and Superphosphate at 40 lbs. nitrogen and 30 lbs. P_2O_5 per acre.

Results

134. There were no marked differences in yield of paddy resulting from the treatments although Ammonium Sulphate appeared to be superior to Urea. There were no appreciable differences in favour of Superphosphate or bone meal in the presence of Urea. Superphosphate was better than bone meal in the presence of Ammonium Sulphate. Ammonium Sulphate plus Superphosphate gave a higher yield than Urea plus bone meal.

(v) *Fertilizer trials on Typical Rice Soils*

135. Experimental work on rice fertilizer requirements has been conducted since 1950 on agricultural stations. The Soil Survey has confirmed what was suspected in 1953 that stations did not contain several of the more important rice soil types. In consequence, commencing in the year under review work is being repeated on soil types not available on stations and for convenience the chosen locations have been rented from farmers.

136. Three series of trials testing four levels of each of the N P K nutrients were carried out in six localities on four soil types; the design of the experiments were a 4 × 4 Latin square. The treatments were as follows:

Nitrogen Test: Standard dressings of Superphosphate and Muriate of Potash at 30 lbs. per acre added to each plot; nitrogen levels in the form of Ammonium Sulphate were nil, 30 lbs., 60 lbs., 90 lbs. nitrogen per acre.

Phosphorus Test: Standard dressings of Ammonium Sulphate and Muriate of Potash at 30 lbs. per acre each was added to each plot; P_2O_5 levels as Superphosphate were nil, 30 lbs., 60 lbs., 90 lbs. P_2O_5 per acre.

Potash Test: Standard dressings of Ammonium Sulphate and Superphosphate at 30 lbs. per acre were added to each plot; Potash levels as Muriate of Potash were nil, 30 lbs., 60 lbs., 90 lbs. per acre.

137. (*a*) *Kam Tin District:*

Soil Type: Chek Nai Ping (poorly drained); location: Tai Hong Wai Village. Normal cropping on this land is two crops of paddy followed by one crop of winter vegetables.

Results: Nitrogen Test—Increases in yield were obtained up to 60 lbs. nitrogen per acre.
Phosphate Test—No appreciable difference in yield obtained.
Potash Test—Potash dressings tend to reduce yields.

138. (*b*) *Tai Po District:*

Soil Type: Chek Nai Ping (very poorly drained); location: Cha Hang Village; normal cropping on this land is two crops of paddy followed by winter fallowing.

Results: Decreasing yields following nitrogen application; decreasing yields followed Potash applications; Phosphate was beneficial at dressings of 20 lbs. per acre.

139. (*c*) *Deep Bay District:*

Soil Type: Mai Po Soil (poorly drained); location: Mai Po Village; cropping: two crops of paddy; one vegetable crop in winter.

Results: Marked responses to nitrogen treatments; no response to P_2O_5; response to K_2O at 30 lbs. per acre level.

140. (*d*) *Sheung Shui District:*

Soil Type: Mai Po Soil (poorly drained); location: Sheung Shui Wai Village; cropping: two crops of paddy followed by winter fallowing.

Results: Nitrogen at 30 lbs. per acre level was beneficial above this it is wasteful; no indication that Phosphate is required; response to K_2O with an upper limit of 30 lbs. per acre.

141. (*e*) *Lam Tsuen District:*

Soil Type: Lam Tsuen Soil (imperfectly drained); location: Ping Long Village; cropping: two crops of paddy, one of winter vegetables.

Results: Response to nitrogen at an upper level of 30 lbs. per acre; Phosphate treatments were not beneficial; Potash treatments were not beneficial.

142. (*f*) *Castle Peak District:*

Soil Type: Sun Hing Soil (poorly drained); location: Shun Fung Wai Village; cropping: two crops of paddy, one of winter vegetables.

Results: Nitrogen up to 60 lbs. per acre was beneficial; no response to P_2O_5; K_2O tended to depress yields.

(vi) *Paddy Seed Dressing Experiment*

143. The object of this experiment was to test out the effect of 'Agrosan 5 W' (an organo-mercury compound containing 5% of organically combined mercury) as a controlling agent against Rice Blast Disease. A very susceptible rice blast paddy variety (Wong Huk Chai Mei) was chosen for the test. The trial was carried out at Castle Peak Agricultural Station.

144. The design of the experiment was six randomised blocks and the treatments were: (i) untreated control; (ii) dry seed treated with 'Agrosan 5 W' at one part of chemical to 200 parts of seed by, weight one week before sowing. An appreciable increase in yield of paddy was obtained from the treated seed.

(B) VEGETABLE RESEARCH

(i) *Fertilizer Trial*

145. Work was repeated on the trial conducted at Sai Kung Agricultural Station (see Annual Report for 1957/58 page 44). The purpose of the experiment is to compare the response of certain leafy vegetable crops to fertilizers such as nightsoil, compost, artificial fertilizer, organic fertilizers (such as oil cakes) and combinations of these agents, having in mind that supplies of nightsoil *are* limited and may be a diminishing factor in local agriculture and also that cake, although used traditionally, is more valuable as a feeding stuff.

146. The crops used in the present series were Chinese Spinach, White Cabbage and Cabbage and the design of the experiment was six randomised blocks each containing six plots. The treatments were: (i) nightsoil (control); (ii) organic fertilizer; (iii) inorganic fertilizer; (iv) nightsoil plus compost; (v) peanut cake built up with Urea, Muriate of

Potash plus compost; (vi) inorganic fertilizer plus compost. The rates of application of fertilizer was governed by analytical data on the nitrogen P_2O_5 and K_2O contents and the tests conducted both by the dry bed cultural technique and the raised bed cultural method with water in furrows surrounding each bed.

Results

147. (i) Again it was found that best results are obtained with compost supplemented with inorganic fertilizers; (ii) similar results are obtained with compost plus organic fertilizers but the traditional use of oil cakes is uneconomic in the quantity required; (iii) compost plays a very important part in maintaining the fertility of local soils and better yields are secured when compost is a component of any treatment; (iv) it is obvious that nightsoil is not a necessity as is believed by farmers and can with advantage be replaced by compost and economic dressings of inorganic fertilizers. Compost made with nightsoil would be a valuable product.

(ii) *Sweet Potato Variety Trials*

148. Work continued at Ta Kwu Ling Agricultural Station on Sweet Potato variety trials to determine those varieties which give the best yields of vines and roots. The Department has made a large collection of varieties for the purpose of finding quick maturing high yielders as a possible source of bulk animal feeding stuff.

149. From some three hundred varieties tested over the past five years, forty seven were selected for trial in the 1958/59 season. Outstanding varieties for vine production were Nos. 59, 213 and 223; for tuber production Nos. 7, 29, 33, 153, 161, 172, 183 and 190 excelled; variety No. 85 was again outstanding in the production of both vines and tubers.

(C) PESTS AND DISEASES OF PLANTS

150. Seven fungicidal preparations and twenty three insecticides were tested out against diseases and pests of field, vegetable and orchard crops; many of these preparations will find a use in local agriculture. By arrangement with a local firm formulations of different percentages of Parathion and Malathion were prepared for trial against the flea beetle which is a destructive pest of vegetable crops.

151. On account of its toxicity Parathion is not permitted for general use as an insecticide although it is in most cases a superior insecticide. The purpose of this experiment was to find out if a safe preparation involving Parathion could be used as a general purpose insecticide. Mixtures containing (24% Parathion: 56% Malathion) and (16% Parathion: 64% Malathion) gave excellent kills with no measurable difference between the two preparations. Good results were also secured with a preparation containing 8% Ethyl Parathion and 72% Malathion.

(D) HORTICULTURAL INVESTIGATIONS AT HIGH ALTITUDES

Tai Mo Shan

152. Since 1953 when a few plots were opened up work has continued at Tai Mo Shan High Altitude Station (2,000 ft.). In the first few years many difficulties were encountered and it appeared likely that the establishment of pine and other high altitude tree species was the only answer to land utilization.

153. Research on the problems encountered including drainage, soil fertility, wind damage and the trials of plant species considered suitable to the climatic environment produced the following findings:

(i) With attention to drainage, irrigation, soil conservation, mulching, fertilizer treatment, citrus and other orchard trees are doing much better than previously. There appears to be every hope of establishing orchards at this elevation. Trees already established include 132 citrus, 8 peach, 3 persimmons and 28 Japanese apricot.

(ii) Three types of tea namely (*a*) the Chinese small leaf, (*b*) Japanese small leaf tea and (*c*) Koon Loon big leaf tea have been successfully established and are doing well.

(iii) Vegetable varieties of cabbage, carrot, dwarf pea, lettuce, beet, Chinese cabbage, tomato, bush bean have been tried with varying success. Present indications are that hardy vegetables (tolerant to light frost) such as cauliflower, lettuce, carrots, celery, pea, onion, garlic and leeks should be capable of cultivation throughout the year. Very hardy vegetables (frost tolerant) such as cabbage, brussel sprouts, broccoli, kale, turnips, kohlrabi, beetroot, spinach, parsnips and rhubarb could be grown from November to March.

Work is being concentrated at the present time on vegetables, tea and citrus; the next step will include the introduction and study of fodder crops, berry fruits and flowers.

Pak Ngau Shek

154. Scientists of the Department gave technical assistance and advice on the establishment of this K.A.A.A. venture in land utilization which provides a unique opportunity of studying plant establishment on steep country up to 1,500 feet elevation.

155. Records are being kept on a wide range of fruit trees, several fodder crops and vegetables both at low and high elevations. Of particular interest are the terraced vegetable plots at 1,500 feet which provide a useful comparison with the work being done at Tai Mo Shan at 2,000 feet on much poorer soils. After a few more seasons it is expected that important conclusions effecting land utilization at high altitudes will emerge from these combined efforts.

(E) DRY LAND FARMING

156. Shortage of agricultural land and limitations to the development of irrigation make it imperative in this densely populated Colony that attention should be given to problems of dry land farming on marginal and abandoned land. In the land utilization survey of 1954 it was clearly established that 2,715 acres (12%) of farming land had been abandoned through lack of water and soil infertility.

157. In order to study problems of farming under dry conditions a site was chosen in 1956 near Ping Che Village comprising a few abandoned plots and barren hills. At the outset because of the unfavourable environment, crop failures were experienced on the new Ta Kwu Ling Station but considerable improvements have followed the appreciation of the limiting factors involved and the adoption of cultural techniques to meet the conditions.

158. A study of rainfall in 1958 indicated that 23.8″ fell between March and June and 52.7″ between July and October; in the dry period from November 1957 to February 1958 a total of 6.2″ was recorded. It would appear therefore that two rainfed crops can be grown in the wet season (March to October) if short term crops are planted.

159. Preliminary observations indicate that soil fertility and water holding capacity can be built up with compost and deep ploughing—by breaking up the hard soil crust—also aid in improving water retentive capacity. It is obvious also for many reasons that the association of stock with such areas will have a marked effect on farm economy and soil fertility.

160. As is to be expected at this stage crops planted at Ta Kwu Ling Station gave rather low yields compared with those grown on well irrigated lands. Results already obtained are recorded below:

TABLE 3

YIELDS OF CROPS PLANTED AT TA KWU LING

Crop	*Date Planted*	*Yield in catt./d.c.*	*Yield in lb./acre*	*Remarks*
Groundnut	6. 4.57	114	912	Poor germination, growth affected heavy rains.
.. .. ..	23. 3.58	—	—	Crop failed due to dry wind damage.
Sweet Potato	18. 5.57	311	2,488	Yield of root.
.. ..	18. 9.57	830	6,640	.. .. ..
.. ..	23.10.57	740	5,920	.. .. ..
.. ..	17. 6.58	500	4,000	.. .. ..
.. ..	19. 8.58	700	5,600	.. .. ..
.. ..	22.10.58	—	—	Crop failed due to dry weather.
Sorghum	20. 9.57	40	320	
.. .. ..	4. 4.58	104	832	
Sesame	19. 4.57	74.4	595.2	
.. ..	9. 7.58	57	456	
Turnip	8.11.57	1,260	10,080	
.. ..	11.11.58	177	1,416	Premature seeding.
Soybean	9. 7.57	—	—	Crop failed.
Duck Foot Millet ..	10. 4.58	140	1,120	
Water Melon	15. 4.58	1,100	8,800	Irrigated by well water.

(F) FODDER CROP TRIALS

161. In accordance with policy observations are being recorded on growth and yield of new plant introductions which may be suitable for livestock feeding or soil cover.

Russian Comfrey (Symphytum peregrinum)

162. In August 1958, 100 root offsets of Russian comfrey were obtained from Australia and eighty four plants were successfully established. In the cold dry season from October to January growth of the plants was slow. Only two cuttings were made during the early spring of 1959. After the wet season set in, growth of the crop was retarded and leaves turned brown, withered and died. The crown and roots were found to have rotted. Plants grown in pots with well-drained soil survived.

Legumes

163. Three varieties of soybean (Pearl soybean, Blue soybean, Black soybean), Mucuna capitata, Sesbania sesban, Centrosema pubescens, Desmodium intortum, Astragalus chinensis, Blue Lupin and Yellow Lupin were received from Taiwan and planted in observation plots.

(i) *Soybean*

Pearl soybean, Blue soybean and Black soybean were planted for seed multiplication; growth was not vigorous. The Pearl soybean set some seeds but no seed was set by the other two varieties.

(ii) *Velvet Bean (Mucuna capitata)*

Mucuna capitata is a creeper with vines up to 30 feet long. The plant grew vigorously in the wet season. At the end of a year it deposited a litter of dry leaves as high as 4 inches in thickness. Seeds have been saved and larger areas will be planted in the year 1959/60.

(iii) *Sesbania sesban*

Sesbania sesban is a fast growing small tree which may be useful for temporary shade in tea. Seeds were multiplied for further trials.

(iv) *Centrosema pubescens and Desmodium intortum*

Growth of Centrosema pubescens and Desmodium intortum was very slow in the first year. When established they formed a good cover. They would appear to have a use for planting as cover crops in orchards.

(v) *Astragalus chinensis*

Astragalus chinensis grew very slowly in the dry season. Vigorous growth commenced after the onset of early rains. Under hot and humid weather conditions the plants were badly infected with powdery mildew. Seeds have been saved for further trials.

(vi) *Lupins*

Blue Lupin (Lupinus angustifolius) and Yellow Lupin (Lupinus luteus) were planted in rows between fruit trees. The Blue Lupin grew more vigorously than the Yellow Lupin. These plants are susceptible to powdery mildew disease.

Fodder Grasses

164. Three species of fodder grass were introduced from Taiwan. The names of the grasses were:

(1) Buffel Grass (Pennisetum ciliare)
(2) Pangola Grass (Digitaria decumbens) 2 strains
  (*a*) Philippine strain
  (*b*) Hawaii strain
(3) Star Grass (Cynodon plectostachyon)

165. Seeds of Buffel Grass failed to germinate. Of the two Pangola Grasses the Philippine strain grew more vigorously than the Hawaii strain. Yields of the grasses are as follows:

TABLE 4

Plot size=30 sq. ft. (3′ × 10′)

Name of Fodder	*No. of cuttings*	*Total yield catties*	*Equivalent to tons per acre*
Pangola Grass (Hawaii strain)	3	38	32.8
Pangola Grass (Philippine strain)	4	70	55.5
Star Grass	4	45	39.9

PART 3

ANIMAL INDUSTRIES DIVISION

Officer-in-charge: Mr. J. M. Riddell-Swan, B.Sc. (Edin.), M.R.C.V.S.—
Acting Senior Veterinary Officer

GENERAL

166. The activities of the Division continued as in 1957/58 but with increased emphasis on disease control, livestock improvement and laboratory activities.

167. During the year and in accordance with approved policy, it was decided to conduct experimental work on artificial insemination in pigs with a view to developing this technique in the Colony. The Veterinary Officer and an Agricultural Supervisor Class I visited Japan to make a detailed study of the technique of artificial insemination as practised in that country.

168. The educational regulatory and extension work of the Division was maintained and broadened. The Division was involved in much additional work resulting from the importation of Australian cattle and the investigation of sites for slaughter stock quarantine areas, dog quarantine kennels and areas for dairy expansion.

LIVESTOCK POPULATION

169. During the latter part of 1958 a census of the animal population of the Colony was made and yielded the following results:

Dairy cattle ...	2,935	
Brown cattle ...	13,818	
Water buffaloes ...	1,938	
Pigs	105,631	(including 11,119 breeding stock)
Sheep	17	
Goats	326	
Rabbits	660	
Chickens	1,200,000	(including 66,000 'local' breeding birds, 20,000 leghorns)
Geese	25,000	(including 2,600 breeding stock)
Ducks	130,000	(including 6,500 breeding stock)
Turkeys	380	
Quail	6,000	(all breeders)
Pigeons	120,000	(including 20,000 pairs of breeding stock)

170. During the year all Government livestock remained healthy and no serious outbreak of disease was reported.

Cattle

171. Government maintains a herd of twenty eight local brown cattle and nineteen water buffaloes for work on Agricultural Stations. During the year five brown cattle calves and one buffalo calf were born, two old animals were discarded and one old buffalo died. All Government cattle were inoculated against Rinderpest.

Pigs

172. Government maintains herds of Middle-White, Berkshire, Local and Large-White pigs for experimental purposes and for the issue of improved breeding stock to farmers in the Colony. All pigs were inoculated against Swine Fever and were regularly blood tested for evidence of infection with Brucella suis. No reactors to this test were detected.

173. During the year 1,062 piglets were farrowed on Government Agricultural Stations, 536 piglets were sold to the Kadoorie Agricultural Aid Association, ten local female breeding stock and forty nine male and female exotic breeding stock were sold directly to farmers. A total of seventy two exotic breeding stock have now been issued to approved farmers in the Colony. These animals are regularly examined for general health and blood tested for evidence of Brucella suis infection. To date only two reactors to this test have been discovered both occurring on the same farm.

174. During the year two Middle-White boars and one pregnant Middle-White sow were purchased from Japan for routine herd improvement.

175. A unit was established for the investigation of artificial insemination in pigs with the ultimate aim of developing pig artificial insemination in the Colony. A complete range of equipment for use in artificial insemination was selected and purchased from Japan. The Insemination Centre has been established at Castle Peak Agricultural Station and is stocked with six boars of the Large-White, Middle-White, Berkshire and local breeds. All these animals are fully trained for use in artificial insemination and collections of semen are regularly made. During the year fifty eight semen collections were made from the trained boars, for both experimental and breeding purposes. Thirty sows were

artificially inseminated of which twenty six conceived to the first insemination, two conceived to the second insemination, one conceived to the fourth insemination and one proved sterile. Two sows which were artificially inseminated, farrowed eight and ten healthy piglets respectively during the year. The most difficult problem in artificial insemination of pigs involves the correct recognition of the time to inseminate the sow. This is easier to determine in the local sow than in the exotic type. The local sow usually exhibits more marked visible signs of oestrus but this important factor is difficult for the average pig breeder to determine in the nervous type sow of any breed. The experimental cross breeding work was continued at Sai Kung Agricultural Station and will shortly be concluded. Preliminary observations on this series of experiments appear to indicate that the first generation cross breed of a Middle-White male and an improved Local type female is a very suitable pig for local conditions. Females of this cross, bred back to Middle-White males have proved very satisfactory.

Poultry

176. Government maintains a flock of White Leghorns for the production of specialized eggs for laboratory and hatching purposes and flocks of several other breeds such as Cantonese, Wai Chau, Barred Plymouth Rock, Brown Leghorn, New Hampshire and Mikawa for experimental and demonstration purposes. The main poultry work is carried out at Castle Peak Agricultural Station with subsidiary stations at Tsuen Wan, Sha Tin and Tai Po. During the year the poultry section was re-organized and preparations were made to carry out experimental cross breeding. To this end the improved Cantonese flock is being built up and a new progeny testing house was completed at Castle Peak Agricultural Station in November. This house will be used for progeny testing the several breeds and their crosses in conjunction with the cross breeding work.

177. All birds on Government stations are regularly tested for Salmonellosis and twenty two reactors to this test were discovered and discarded during the year. All the birds are inoculated at one day old with Newcastle Disease Nasal Drop 'F' strain vaccine, at four weeks old with Ranikhet Vaccine and at three to four months old with Fowl Pox Vaccine.

Sheep

178. A flock of sheep are maintained at Castle Peak Agricultural Station for laboratory purposes and in July two new rams were acquired

for breeding. This resulted in eleven healthy lambs being born during the year.

Livestock Improvement Plan

179. During the year the Livestock Improvement Plan started in 1957 was expanded and elaborated, widows of farmers still being used as the medium of extension. At the beginning of the year due to adverse economic conditions, pig raising, in common with other livestock ventures in the New Territories, was not at all profitable, but with the increase in the price of pigs towards the end of the year, the Plan received a great financial stimulus.

180. During the year 122 'widow units' were added to the Plan bringing the total number established up to 241. Each widow is given a unit of four sties together with either adult breeding stock or weaners dependent on individual circumstances. In addition 586 pigs were given to widows not included in the units. All widows established in units under the Plan are given feed loans from the Kadoorie Agricultural Aid (Loan) Fund to purchase feedstuff approved by this Department.

181. A special team of officers of the Division is engaged in the management and guidance of this Plan which is proving a very effective factor in the improvement of pig raising in general. Due to the good results achieved by the participants in the Plan many local farmers are now appreciating the advantages of our advice on the correct management and feeding of pigs. In conjunction with this Plan twelve boar centres have been established in various districts and are proving beneficial in the improvement of the quality of the animals produced under the Plan.

DISEASE CONTROL

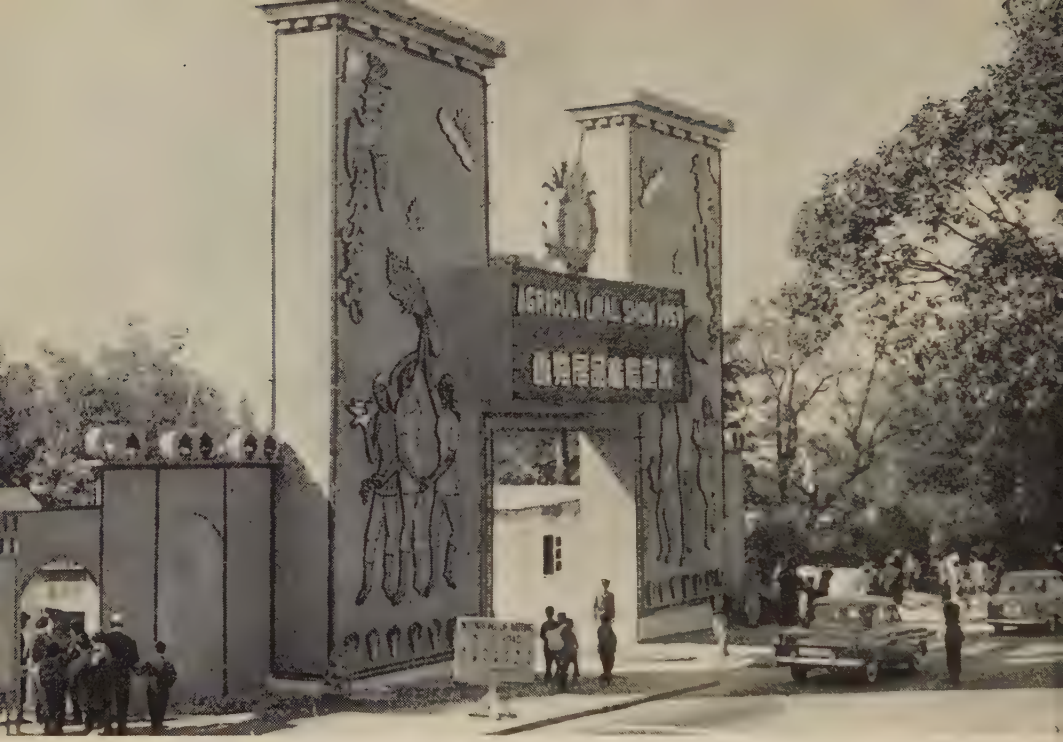
182. The Disease Control Section of the Division is divided into a Disease Control Field Service Section with laboratory facilities and a Disease Control Regulatory Section.

Field Service

183. For the purposes of this service the Colony is divided into areas each under the control of an officer of the Division. These officers are responsible for the diagnosing, reporting and treating of outbreaks of animal diseases in their areas and are available to carry out various special investigations and furnish any reports requested by the Department. They also give extensive information on preventive medicine, general animal husbandry and all matters pertaining to livestock.

Quarantine Depot and Abattoir for Slaughter Cattle from Australia, Lantao.

Poultry Houses at Castle Peak Livestock Research Station.



Gateway to the 1959 Agricultural Show Ground.

Departmental Pest Control Service spraying a farmer's vegetable crop.

184. During the year these officers attended 5,504 outbreaks of disease involving 21,522 animals and 23,040 poultry and carried out numerous special investigations.

185. Preventive inoculations of farm animals against diseases are also undertaken by mobile teams of this section and the comparative figures of such inoculations for the preceding three years are given below:

TABLE 5

Inoculations	*1956/57*	*1957/58*	*1958/59*
Rinderpest	8,177	9,906	11,073
Swine Fever	14,500	16,580	20,180
Newcastle Disease (Ranikhet) ...	2,266,000	3,574,000	4,351,000
Newcastle Disease ('F' strain) ...	822,330	553,550	1,622,080
Blackleg	—	—	534

This increase in preventive inoculations is most encouraging and has had a marked beneficial effect on the general health of the livestock of the Colony.

186. During the year the price of Swine Fever vaccine was reduced to $0.25 a dose, a factor which greatly increased the demand for this service. It is encouraging also to note that no case of Swine Fever has been reported in inoculated animals despite their being in many cases in close contact with the disease.

187. For the first time Government carried out inoculations against Blackleg in cattle following the positive identification of this disease in the Colony.

188. No serious outbreak of disease occurred in the Colony during the year with the exception of an outbreak of Foot and Mouth Disease in the dairy farms situated on the Kowloon Peninsula.

(i) *Foot and Mouth Disease*

189. During the year the incidence of this disease in the Colony increased and 114 outbreaks involving 1,131 pigs, 225 brown cattle, 801 dairy cattle and four buffaloes were investigated. The course of the disease was extremely mild and most of the animals affected made speedy recoveries. Samples were taken from all locally occurring outbreaks and sent to Pirbright Laboratory for typing.

190. There was a widespread outbreak of the disease amongst the dairy cattle on the Kowloon Peninsula due to Type 'O' virus and appropriate restrictions had to be applied. Despite this, the outbreak spread throughout all the dairies in the Diamond Hill area but for-

tunately was mild in nature, the animals recovering completely in two or three weeks. During the outbreak there was a fairly severe drop in milk yield.

191. During the year Type 'O' virus only was identified in local outbreaks. It is noted that in Hong Kong the incidence of Foot and Mouth Disease decreases considerably from April to September and increases again from October to March.

192. No case of Foot and Mouth Disease was reported in the quarantine lairages or abattoirs in imported slaughter animals during the first quarter of the year, but 129, 396 and 244 cases were reported during the ensuing three quarters. Samples were taken and sent to Pirbright Laboratory for typing and all proved to be Type 'O' virus with the exception of three samples from cattle imported from China, in which Type Asia I virus was identified.

(ii) *Anthrax*

193. No case of Anthrax was found among the local animals of the Colony but twenty cases were discovered and dealt with in the quarantine lairages in animals imported for slaughter.

(iii) *Rinderpest*

194. No case was reported during the year, making this the ninth consecutive disease free year.

195. During the year 11,073 animals were inoculated against this disease by officers of the Division. This is an increase of 1,167 inoculations over last year's figure.

(iv) *Piroplasmosis*

196. An outbreak of this disease occurred amongst the dairy cattle in Diamond Hill involving twenty eight animals. The parasite was identified as Babesia bigemina and all animals responded well to treatment.

(v) *Ephemeral Fever*

197. During the year no case of Ephemeral Fever was diagnosed.

(vi) *Blackleg*

198. An outbreak of this disease was reported in the Tung Chung area of Lantao and was confirmed bacteriologically. This is the first positive identification of the disease in Hong Kong. As a result, 534 cattle in the area were inoculated with Blackleg Vaccine by officers of the Division.

(vii) *Swine Fever*

199. During the year eighty three outbreaks of this disease involving 657 animals were investigated. This is a decrease of approximately 50% as compared with last year. There were only thirty three fatalities, but the economic loss due to this disease is still of considerable importance. All outbreaks occurred in uninoculated animals.

200. During the year 20,180 pigs were inoculated against this disease by officers of the Division, constituting an increase of 3,600 over last year's figure. This continued increase in the number of animals inoculated is proving a great factor in combating the disease.

201. 424 cases of Swine Fever were discovered in the quarantine stations and abattoirs during the year.

(viii) *Swine Erysipelas*

202. Nine outbreaks of this disease involving twenty three animals, most of which responded well to treatment, were reported during the year.

(ix) *Virus Pneumonia of Pigs*

203. The incidence of this disease increased during the year and 645 outbreaks affecting 1,420 pigs were reported. The disease constitutes one of the major economic losses to pig raisers in the Colony and constant educative measures to combat its spread are practised by officers of the Division.

(x) *White Scour*

204. During the year 1,361 outbreaks involving 11,913 piglets were reported and investigated. Of this number, only seventy three deaths were recorded, the others responding well to treatment.

(xi) *Gastro Enteritis of Pigs*

205. This continues to be the commonest complaint in adult pigs but fortunately it responds well to treatment. 650 outbreaks involving 1,738 pigs were reported and only nine deaths were recorded.

(xii) *Paralysis of Sows*

206. During the year 106 cases of Paralysis in lactating sows were investigated. This Paralysis occurs usually between the 35th - 55th days after farrowing and in many cases responds satisfactorily to two or three subcutaneous injections of 30 c.c. of a 20% solution of calcium borogluconate and the feeding of a mineral supplement.

(xiii) *Newcastle Disease of Poultry*

207. The incidence of this disease fell during the year and only forty two outbreaks involving 4,583 birds were reported. All outbreaks occurred in uninoculated flocks and the mortality rate continued to remain high.

208. The Department imported for use in the Colony 1,622,080 doses of Weybridge 'F' strain Nasal Drop Newcastle Disease Vaccine from Thailand and 4,351,000 doses of Ranikhet Vaccine from Malaya. Officers of the Division inoculated 1,388,250 birds with the Ranikhet Vaccine and issued 2,962,750 doses for use by the farmers themselves. The 'F' strain vaccine is simple to use and is always administered by the farmers themselves. These inoculations constitute an increase of 1,068,530 doses of 'F' strain vaccine and 777,000 doses of Ranikhet over the previous year.

(xiv) *Pasteurellosis of Birds*

209. The incidence of this disease decreased considerably and only nineteen outbreaks involving 149 birds were reported. However, mortality was very high and ninety three deaths were reported.

(xv) *Coryza of Fowls*

210. During the year this was the most prevalent disease reported among poultry and 298 outbreaks involving 6,430 birds were reported. Special efforts were made to educate farmers in the early identification of the disease and the prompt introduction of remedial measures.

(xvi) *Fowl Pox*

211. During the year fifty eight outbreaks involving 1,254 birds were reported.

(xvii) *Coccidiosis*

212. There was an increase in the incidence of this disease and 194 outbreaks involving 4,465 birds were reported.

(xviii) *Salmonellosis of Poultry*

213. During the year 126 outbreaks involving 2,129 birds were reported.

Veterinary Laboratory

214. The veterinary laboratory continued to function very efficiently and produced all the Rinderpest Vaccine used in the Colony. The diagnostic work steadily increased and the efficiency of the laboratory

was greatly improved by the addition of new equipment. During the year 257 microscopic examinations, 192 cultural examinations, 1,064 biochemical reactions and 197 agglutination tests were carried out.

Regulatory Section

Rabies Control

215. The Colony remained free from rabies for the third consecutive year.

216. There are now eleven dog inoculation and licensing centres in the Colony, four in the Urban Area and seven in the New Territories. In addition, three mobile units are engaged in the coverage of the remoter areas. This ensures that inoculation and licensing services are available at the least inconvenience possible to all dog owners in the Colony.

217. The Division also maintains a Dog Control Unit which is normally engaged in the impounding of stray and unlicensed dogs. This Unit assists in the licensing and inoculation of dogs in the many resettlement and squatter areas in the urban district, and also carries out inoculations and licensing in the New Territories during the course of its normal duties. Sites have been selected for the new quarantine kennels both in Hong Kong and in Kowloon, and it is hoped to proceed with building at an early date.

218. During the year 12,122 dogs were licensed and inoculated against rabies and 7,848 were licensed only. This is an increase of 3,327 over last year. Further statistics on Rabies Control are given at Appendix 11.

Animal Quarantine

219. Officers of the Division are responsible for the inspection at the point of entry into, and the supervision of the transport within the Colony, of all animals imported for slaughter. During the year these officers boarded, for inspection purposes, 385 vessels transporting some 136,700 swine and 29,250 cattle in addition to the inspection of all animals arriving by land transport.

220. During the year a total of 1,178,896 pigs, 137,844 cattle, 1,751 sheep and 12,081 goats were admitted to the quarantine lairages for slaughter. Of these 313,099 pigs, 4,929 cattle and eighty eight goats were of local origin, the remainder being imported. This represents an increase as compared with 1957/58 in the imported pigs and cattle of 254,464

(41.5%) and 40,041 (43%) respectively, and an increase in the locally produced pigs and cattle of 63,125 (25%) and 1,333 (37%). Of the locally produced cattle slaughtered for food, 344 were discarded adult dairy cattle, 653 were discarded dairy calves and 3,932 were local brown cattle and buffaloes.

221. It has been decided to establish a quarantine station at Tai Lam Chung for slaughter cattle imported from Asia and an area of land has been allocated for this purpose by Government. It is proposed that the construction of this station be commenced in the near future as considerable strain continues to be placed on the present quarantine facilities.

New Territories Abattoirs

222. Officers of the Division are responsible for meat inspection as well as animal quarantine in the New Territories abattoirs at Yuen Long and Tai Po. In these abattoirs the total numbers of cattle and pigs slaughtered increased during this year from 4,795 to 5,361 (12%) and from 61,027 to 131,534 (115%) respectively as compared with 1957/58.

Lantao Quarantine Depot and Abattoir

223. During the latter part of 1958 extensive holding yards and slaughtering facilities were erected at Tai Pak on Lantao Island by a private concern with departmental advice. These holding yards are specifically designed for the importation of slaughter cattle from the Northern Territory of Australia and as contagious bovine pleuro-pneumonia is endemic in this area stringent quarantine precautions were enforced. The whole area is isolated by high double fencing and as an additional precaution all animals are inoculated against contagious bovine pleuro-pneumonia before shipment. An Overseer of the Division assisted by Stockmen is responsible for the meat inspection in the abattoir and the maintenance of quarantine in the depot.

224. The first shipment of cattle arrived in December 1958 and since then 2,816 cattle and ninety four buffaloes have been imported for slaughter. The animals were of the poorer quality, leaner type but travelled well and of the total number shipped, only five deaths at sea were recorded. The unloading procedure has markedly improved since the first shipment and now functions fairly smoothly. The meat from this abattoir is transported in a specially equipped refrigerated barge to the urban area for sale.

Dairies

225. During the year testing of the dairy cattle for tuberculosis was continued and sixteen reactors were detected and slaughtered, compensation being paid to the owners.

226. During the year forty milk samples were taken from various dairies and twenty such samples were found to be below standard. This led to the issue of warnings to the licensees concerned and increased educative work by the officers of the Division on clean milk production. These actions have resulted in a noted improvement in the cleanliness of milking equipment and the more rapid despatch of raw milk to the pasteurization plants.

Veterinary Inspection

227. The Division is responsible for the appropriate certification of animals, reptiles, birds and products of animal origin intended for export.

228. During the year, certificates of health were issued for 2,449 animals, 165,163 birds and 6,458 reptiles. In addition, various certificates were issued for 7,716,950 lbs. of animal products.

229. Summarized information and statistics are provided in Appendices 11, 12, 13, 14 and 15.

PART 4

FISHERIES DIVISION

Officer-in-charge: Mr. W. D. Orchard—Fisheries Officer

230. The Division is concerned with fisheries administration and extension work. Promotion of mechanization, development of better fishing boats, training of fishermen for Marine Department certificates of competency as masters and engineers, together with the introduction of improved fishing gear and new fishing methods, are the main duties of the marine section.

231. The fresh-water fisheries and oyster culture section maintains close contact with local pond fish and oyster farmers to whom advice is given and, where possible, improved methods of culture are demonstrated.

I. MARINE FISHERIES SECTION

REVIEW OF FISHING ACTIVITIES

Fishing Community and Fishing Vessels

232. The number and types of fishing vessels comprising the Hong Kong fishing fleet, together with an estimate of the population actively engaged in fishing, are recorded at Appendix 16. These figures are based on a rough census carried out at each of the main fishing centres during the Chinese New Year.

Analysis of Catch

233. There will be found at Appendix 17 the monthly landings of the four main categories of vessels throughout the year, and at Appendix 18 an analysis of the most important species of fish caught. In both Appendices the figures for 1957/58 are included for comparison.

Trawler Company Vessels

234. A total of nine pairs of local company-operated Japanese-type 'Bull' trawlers worked mainly in the Gulf of Tongking, around Hainan Island and south of St. John Islands, throughout most of the year. Their seasonal fishing grounds are shown in the map at Appendix 19. These company-operated vessels landed 61,447 piculs of fish as against 93,688 piculs during the previous year.

235. One company-operated trawler 'Lock Hing No. 1' was stranded near the east of Hainan Island on the 20th of January, 1959, while she was pair trawling with 'Lock Hing No. 2'.

Junk Trawlers

236. The mechanized 'deep sea' trawlers did not do well except during the last quarter. In the periods from mid-July to mid-September, and from mid-October to mid-November, most of these trawlers had stopped fishing due to restrictions imposed by the Chinese Government. The fishing grounds for these vessels are south of Ladrone Islands and Lema Islands at depths ranging from fifty to seventy five fathoms. A map illustrating the seasonal fishing grounds of these trawlers is at Appendix 20.

237. The sailing deep sea trawlers had a poor year, their catches being low throughout. A number of them stayed in harbour for five months (from July to November) due to restrictions imposed by the Chinese Government. The fishing grounds for these vessels range from Ping Hoi to St. John Islands at depths of from forty to fifty fathoms.

238. A number of the mechanized inshore trawlers accepted the conditions laid down by the Chinese Government and fished in Chinese waters with good results. The remainder were confined to Colonial waters and had low catches. The fishing grounds for the former vessels are near Lema Islands and Ladrone Islands at about fifteen to twenty five fathoms and for the latter vessels Mirs Bay and Tolo Harbour in New Territories waters.

239. Mechanized shrimp trawlers had good catches during the year following some relaxation by Chinese Authorities. Again there was a poor winter season for White Shrimp. A steady high price on the local market made this business very profitable.

Long Liners

240. Despite periodical difficulties experienced in getting bait, a shortage of ice supplies during the summer and slight interference from sharks, the large 'deep sea' long liners had a good year. All these vessels are mechanized and operate in the fishing grounds from Lema Island to Ping Hoi at a depth from fifty to fifty eight fathoms and from Lema Islands to St. John Islands at depths ranging from fifty to sixty fathoms. A map showing the main fishing grounds worked by these boats is illustrated at Appendix 21.

241. The mechanized Conger Pike long liners did not fish the area near Ladrone Islands since fishermen refused to land their catch in China. The total catch was only fair.

242. Both the mechanized and sailing small long liners fishing for Golden Thread had fairly good results in the fishing grounds off Nine Pin Islands.

Purse Seiners

243. It was a poor year for purse seiners. The yield of Anchovy, Green Pilchard and Yellow Croaker was very low. Some of these vessels changed over to long line fishing in order to maintain their business.

Pa T'eng

244. The Pa T'eng boats did not fish for Mackerel Scad in Chinese waters due to the prohibition of dynamiting by the Chinese Government. Some of the mechanized Pa T'eng turned to long lining with favourable results; others tried shrimp trawling but had poor catches.

245. The Yellow Croaker season was poor. Pa T'eng boats engaged on this fishery had very low catches.

246. The White Herring and Mackerel seasons were quite good in the first quarter, but catches were not high enough to compensate for poor catches in subsequent periods.

Gill Netters

247. The Yellow Croaker season, the main fishery for the Tai O based 'Big Tail' junks and the small gill netters, was again a failure. Fortunately, they were able to obtain good catches of White Herring, Mackerel, Macau Sole and Thread Fin by using nylon gill nets.

Mechanization

248. An additional 164 vessels joined the mechanized fleet, and after allowing for eighty five former mechanized vessels which either reverted to sail or transferred to the motor trading register, the total strength of the mechanized fishing fleet as at the 31st March, 1959 was 2,366 vessels. Details are recorded at Appendix 22.

249. The mechanization of fishing junks decreased greatly during the year under review. The net increase was seventy nine as compared with 763 for the previous year. The reason for this decrease in the rate of

mechanization is directly attributable to the unsatisfactory conditions imposed by the Chinese Government for fishing in their territorial waters.

250. Particulars relating to the engines installed in new mechanized vessels are shown at Appendix 23.

Fishing Boat Development

251. Seventy nine new power-driven fishing boats after examination by the Fisheries Division were recommended for licensing by the Marine Department. This figure does not include the number of newly built sailing craft that were also licensed, no record of which is kept by the Division. Of these seventy nine vessels, sixty four were built in the Colony (including thirty one at Ap Lei Chau, thirteen at Shau Kei Wan, ten at Aberdeen and seven at Cheung Chau) four at Macau and ten at Chinese Ports. A consolidated summary containing brief particulars regarding these vessels, together with information for the previous year, is recorded below:

TABLE 6

NEWLY BUILT FISHING BOAT HULLS MECHANIZED IN 1958/59

Type of Vessel	*No. of Vessel*	*Capacity (in piculs)*	*Main Engine Horse Power*	*Cost of Wooden Hulls*
Deep Sea Trawler	3	7,972	456	$ 181,000
Inshore Trawler	11	7,526	672	82,000
Shrimp Trawler	13	6,141	572	62,950
Shrimp Trawler (Modified Type)	2	1,435	200	46,000
Big Long Liner	2	4,161	260	106,500
Medium Long Liner ..	2	1,463	120	24,100
Small Long Liner	23	4,185	297	60,460
Hand Liner	2	152	11	3,000
Purse Seiner	13	3,017	250	51,500
Gill Netter	7	1,217	71	19,600
Fish Collector	1	153	15	2,000
Total	79	37,422	2,924	$ 639,110
1957/58	577	269,290	21,143	4,197,184
Comparison	−498	−231,868	−18,219	−$3,558,074
	(−86%)	(−86%)	(−86%)	(−85%)

252. More detailed comparative data concerning costs, capacities and engine horse-power installed, etc., in respect of the seventy nine newly mechanized vessels is contained at Appendix 24.

Steam Chest

253. In local junk building practice the timber is bent into shape by the primitive method of subjecting it to direct fire, while the ends are

pressed down with heavy stones. This results in considerable wastage of both material and labour. The Craft Technician designed a simple steam chest which was built and lent to the progressive native yards. This chest was first lent to a shipyard in Cheung Sha Wan in the first quarter, then to a junk builder in Ap Lei Chau in December 1958 and again sent to a native junk builder of Cheung Chau at the end of March 1959. After demonstrations the native shipyards began to adopt this modern method in wood bending.

Progress in Hull Design and Fittings

254. One Small Long Liner was fitted with a steel rudder and steered by a wooden tiller. Two modified type shrimp trawlers were fitted with wheelhouses and steel rudders. Each of them had a quadrant at the rudder head connected through chain cable to the steering wheel in the wheelhouse. Six vessels, including three Inshore Trawlers, one Large Long Liner and two modified type Shrimp Trawlers, were constructed with better shaped sterns thereby eliminating the customary 'A' brackets which are normally used to support the long projection of propeller shaft.

Conversion of Trawling Junks

255. In the last quarter of the year fifty two deep sea and inshore wind driven trawling junks were carefully examined by the Craft Technician and the Supervisors. A report was prepared on the condition of these vessels and an estimated cost of conversion to mechanized deep sea trawling junks provided.

Fisheries Division Vessels

256. The driving gear of the capstan for hauling in the trawl net of Fisheries Division Vessel No. 1 ('Olenka') was improved at the beginning of the year and is giving good results.

257. On painting the hull planking above the water-line of F.D.V. No. 1 ('Olenka'), it was discovered that the marine paint lasted much longer than the wood oil fishermen use for protecting the timbers of their boats. Costs are also cheaper if time and labour are taken into account.

258. In the annual overhaul of the F.D.V. No. 2 ('Yuen Ling'), two radial davits together with pulley blocks at after deck were erected for lifting otter boards in fishing and for holding a sampan in general service trips.

259. A pair trawling resistance test was performed with F.D.V. No. 1 ('Olenka') and F.D.V. No. 2 ('Yuen Ling') in the Lamma Channel.

Readings on two spring-balances for one warp were recorded. Tests were carried out under varying conditions.

260. Work continued on the design of the proposed new F.D.V. No. 3, the length overall of this vessel being changed from 83′ - 0″ to 86′ - 0″. The Craft Technician prepared drawings of general arrangement, midship section and preliminary body plan. These plans were submitted to criticism by Marine Department and it was suggested that a turbo charged marine diesel engine should be installed developing 300 B.H.P. at 750 r.p.m. with reduction gear giving a propeller speed of 250 r.p.m. The drawings of general arrangement and midship section have now been redesigned to include this suggestion together with other minor alterations which were considered desirable.

Fishing Investigations

261. Investigations were made of the possibility of using a native type pair-trawl with otter boards for inshore waters. This work was undertaken by F.D.V. No. 2 ('Yuen Ling'). The ground rope of this net using 20 lbs. of lead sinkers was replaced with a combination of wire rope and manila rope. The results obtained were not satisfactory because the combination rope was too heavy and sank to the muddy bottom.

262. Very good results were obtained with the native pair-trawl net using a pair of otter boards, each measuring 6′6″ × 3′8″ × 2″. After investigation and demonstration this pair of otter boards were given on loan to a trawler fisherman for trial with his pair-trawl-net operating in the off shore fishing ground. He has since made his own otter boards and favours this type of fishing.

263. Work was continued with the small Japanese type pair-trawl made last year using F.D.V. No. 1 and No. 2 in pair trawling. Very satisfactory results followed the extension of the warps from 120 fathoms to 240 fathoms each.

264. A synthetic fibre twine 'Courlene X3' obtained from the United Kingdom was used to make a shrimp net. After several trials over a period of several months, the net was still in good condition. It was also found that this net was free from mud during fishing, had good abrasion resistance, and was stiff enough for a trawl net.

Fishing with Dynamite

265. A considerable amount of fishing with dynamite is carried out by the Pa T'eng and purse-seine-net boats in Colony waters and Chinese territorial waters for Mackerel Scad, Anchovy, Green Pilchard, and other

species of fish. An educational and information programme against the use of dynamite was conducted through the coxswain and engineer classes. An educational film on the danger of dynamite and its effect on fisheries resources was prepared and shown to gatherings of fishermen in the main centres.

Fish Net Making Training Classes

266. In addition to the training programme described in paragraph 75 in Part 1 of this Report, training classes in net making were organized from December 1958 to March 1959. These classes were designed to train fishermen in a new method of net making by cutting machine-made cotton netting and sewing the pieces together in the form desired, in place of the present time-consuming method of braiding the net mesh by mesh. Pamphlets and lecture notes containing diagrams of two types of shrimp nets together with a brief description of the cutting method were distributed to fishermen in the classes and practical demonstrations were given by Fisheries staff.

Chinese New Year Celebrations

267. The fourth annual 'Sports Meeting', organized by the old boys of the Coxswains' and Engineering Classes with the help of the Division, took place at Aberdeen on the first day of the Chinese New Year (8th February, 1959). Teams of fishermen from ten districts competed in a number of sport events. Prizes to the successful teams were presented by the wife of the Director. 1,000 fisherfolk were entertained with soft drinks and food packages, and in all an estimated 4,000 people watched the sports.

II. FRESH WATER FISHERIES AND OYSTER CULTURE SECTION

Fish Ponds

268. This was a fair year for the fish farmers of the New Territories. There was adequate water for the ponds throughout the year. No flood damage was experienced. Fish prices were good, especially in the months of January to March 1959. There was no difficulty in obtaining carp fry from China and prices for fry were also reasonable. The only handicap to a successful season was that Grey Mullet Fry which are captured in local waters were again in short supply. The fish ponds in the New Territories, over 80% of which are slightly brackish are generally more suitable for the raising of Grey Mullet, and consequently the total yield this year was reduced to 70% of that of the previous year.

Supply of Fish Fry

(i) *Chinese Carp Fry*

269. There was no restriction imposed by the Chinese Authorities on the numbers and varieties of fry exported to Hong Kong and prices were reasonable.

(ii) *Grey Mullet Fry*

270. There have been two consecutive years of poor catches of fry. Only some 400,000 fry in 1958 season (January to March) and 1,174,000 in 1959, were caught in the coastal waters, whereas at least four million of these fry are required to fully stock each year all the ponds of the New Territories. The Fisheries Division mechanized vessels were again used to search for fry and a big school was found in the Cheung Chau Island area. The professional Grey Mullet Fry fishermen had successful catches in this region.

Increase of Fish Ponds

271. Four new ponds, covering a total area of 239 dau chung (or 39.8 acres) were put into operation during the year. The area devoted to fish culture as at the end of the year was 3,342.5 dau chung (or 557.1 acres).

K.A.A.A. Loans to Fish Farmers

272. Financial aid by way of loans was received by the Industry from the Kadoorie Agricultural Aid (Loan) Fund. One fish farmer received a loan of $500 for the purchase of fish fry and feed for his fish pond.

Fisheries Division Ponds

273. 4,270 Grey Mullet fingerling stocked in Pond No. 1 were distributed in May 1958 to six fish ponds in the Yuen Long, Mai Po and Sha Tau Kok areas for experimental and demonstration purposes. The fish fingerlings measured seven inches long and weighed one tael each. After nine months rearing under commercial conditions the fish had grown rapidly and in January 1959 measured sixteen to eighteen inches in length and weighed $1\frac{1}{2}$ to $1\frac{3}{4}$ catties. Some of the fish were exhibited at the Agricultural Show.

274. Pond No. 2 was sub-divided into two equal areas by using piles and planks and filling the spaces between planks with soil from the pond. The outer bunds of Ponds Nos. 1 and 2 were raised $1\frac{1}{2}$ feet higher

by adding blocks of earth. This pond will be used for experimental purposes.

Edible Oyster Industry

275. The edible oyster industry is centred on Deep Bay on the western coast of the New Territories. Production figures are recorded in paragraph 35 of this Report. To facilitate export certification, officers of the Division witnessed harvesting operations at the oyster beds and the subsequent processing. Altogether 3,064 containers were sealed and the contents certified as being of Hong Kong origin.

Oyster Culture Experiments

276. Experiments were continued on types of hanging materials suitable for the 'hanging drop' method in oyster culture at Lau Fau Shan. It was found that galvanized iron wire despite corrosion was still the most suitable material. Palm fibre rope was classed as a poor second. Other fibres such as single nylon thread, nylon twines, jute ropes and ramie ropes broke in rough weather, and rattan and bamboo sticks decomposed rapidly.

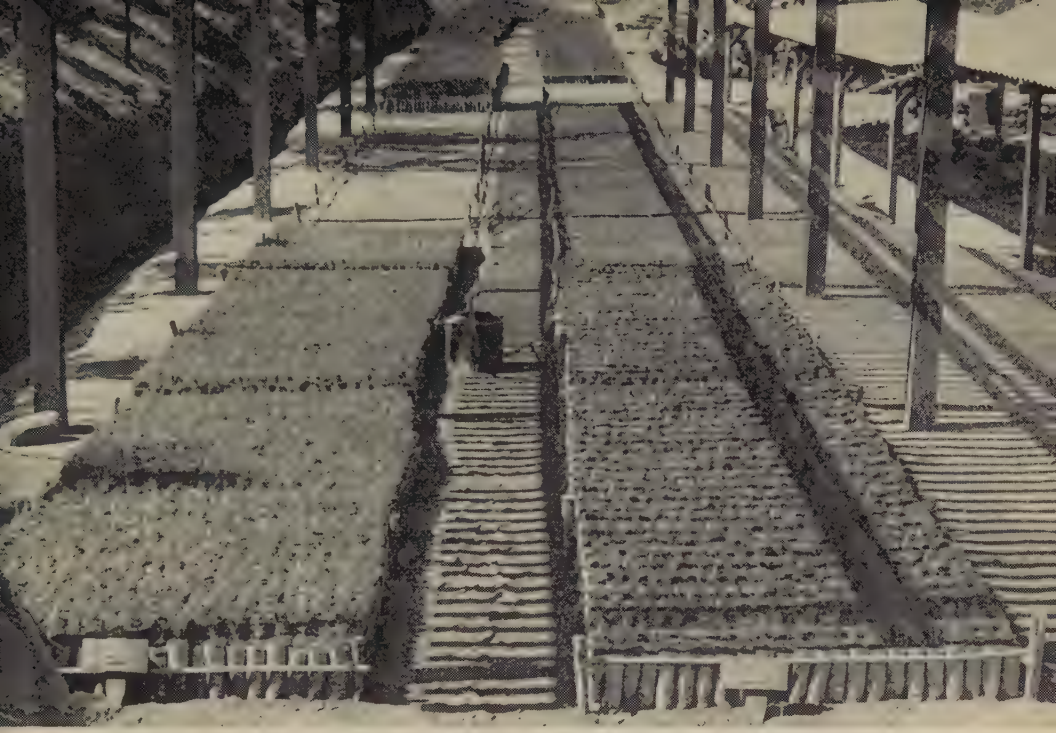
277. Oyster farmers are very interested in the new method and have sought permission to hang large oysters on the experimental rafts for fattening purpose. It has been determined that this fattening process takes three to four weeks which is at least three times faster than the traditional method.

Cultured Pearls

278. The Pearl Culture (Control) Ordinance, 1958 was passed by Legislative Council on the 21st August, 1958 for the 'Wing' Pearl Oyster. Interest is also growing in the use of *Pinctada martensii* which grow abundantly in Colonial waters.

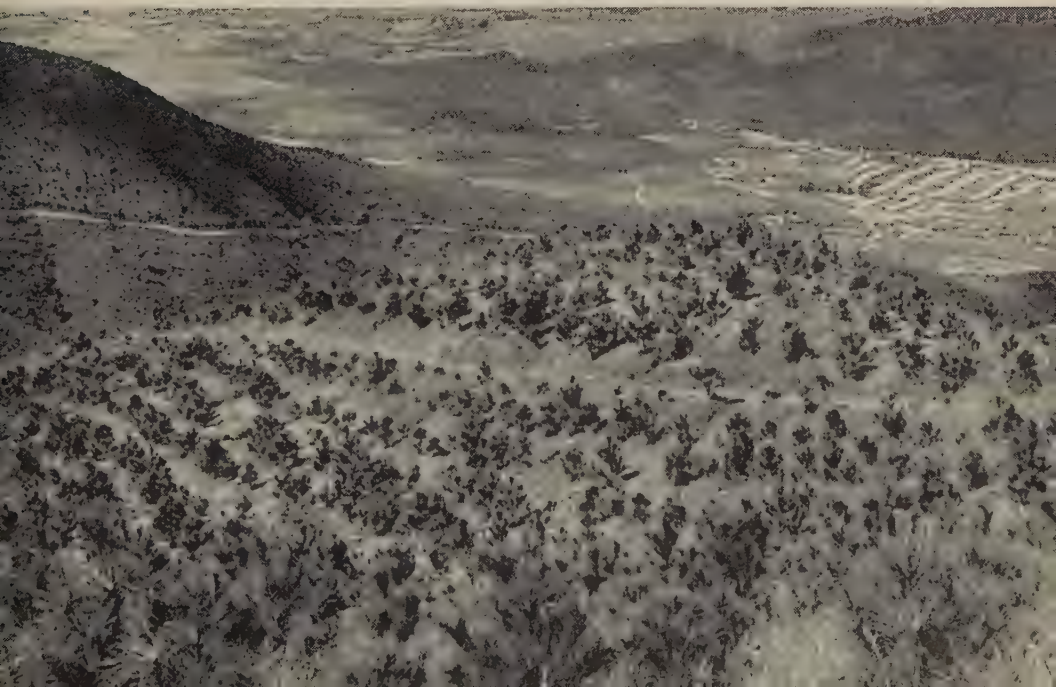
Certificates of Origin

279. In addition to oyster produce, the Division was responsible for the certification of origin of a number of other marine products for export. The quantities and value of this produce are referred to in paragraphs 38 - 46 in Part 1 of this Report.



Nursery tubing shed for Forestry seedlings at Tai Lung. Plants in plastic 'tubes' have given greatly improved establishment results, especially for later plantings.

A view of recently established forest area at Pat Heung. The trees are Pinus Massoniana, China Fir.



The traditional method of bending timber for boat-building is to subject it to direct fire, while the ends are pressed down with heavy stones. This is uneconomical and much labour is wasted in removing the charred wood.

A simple steam chest, built by the Fisheries Division, being used in a junk building yard for the first time.

PART 5

FORESTRY DIVISION

Officer-in-charge: Mr. A. F. Robertson, B.Sc. (Edin.)—Forestry Officer

INTRODUCTION

280. Over three quarters of the land area of Hong Kong is steep and mountainous; the natural vegetation is predominantly grass with scattered areas of scrub and scrub forest in the remote and inaccessible areas. Most of the hill land is suitable for forestry and large scale re-afforestation is urgently required to check soil erosion, conserve water supplies and prevent serious flooding. Briefly, the policy of the Department is to re-afforest the waste hill lands for these reasons and also to produce timber and fuel for local use, both by the formation of Government forest reserves and plantations and by the encouragement of village forestry.

281. An additional area at Shap Long Forest Reserve and an extension area at Tai Po Kau Forest Reserve increased the total area of reserves to 17,551 acres, including 7,923 acres of established plantations and areas under regeneration operations at the end of the year. Most of the forest reserves are in the Colony's water catchment areas.

AFFORESTATION

Seed Supplies

282. 789 lbs. of pine seed and 332 lbs. of seed of other local species were collected locally, and small quantities of seed, notably Pinus, Acacia and Albizzia species were obtained from abroad for trial.

Nursery Work

283. In order to cope with an expanding afforestation programme, new nurseries were started at Tai Tong, Nam Shan and Cheung Sheung. The main nursery at Tai Lung is gradually being equipped to produce high quality stock of various kinds for afforestation, amenity planting and sale to the public. A record number of 80,000 seedlings of *Tristania conferta* which is very susceptible to 'damping off' disease during its early stages and most difficult to transplant were successfully tubed.

284. More than one half of the nursery stock for afforestation in 1958 was tubed. In fact, two districts namely Hong Kong and East have

now concentrated their planting wholly on tubed stock. Tubed stock is definitely superior for afforestation in Hong Kong and polyethylene plastic tubes are relatively cheap and are preferred to tubes of roofing felt or metal.

Plantations

285. A total of 2,127 acres of new plantations was formed (compared with 1,272 acres in 1957). In most cases the results were moderately good but in a few areas the late planted pine did not do well and some replanting will be necessary in most areas.

286. The following is a brief account of work carried out in the main afforestation areas:

(i) *Tai Lam Forest Reserve* (twenty one compartments = 3,393 acres)

This reserve was increased by 124 acres by the inclusion of the waste lands beyond the sub-dam and small islands in another compartment. A total of approximately 397 acres of new planting was done mainly with pine, *Tristania conferta, Eucalyptus citriodora, Eucalyptus sideroxylon, Casuarina equisetifolia* and *Casuarina stricta.* Extensive areas were replanted, thinning of 1952 pines was carried out in compartments 15, 16, 18 and 19 and some gully control work was done in compartments 6 and 7. In addition a few small areas of trial plantings were undertaken in other compartments.

(ii) *Fu Shui Forest Reserve* (five compartments = 1,212 acres)

362 acres of new planting were done mainly with pine in compartments 1, 3, 4 and 5. Forty three acres of replanting of pine were completed in compartments 1 and 3.

(iii) *Shing Mun Forest Reserve* (twenty three compartments = 6,025 acres)

About 306 acres of new planting were made of pine and *Tristania conferta* in compartments 11, 16, 17, 19 and 20. Extensive replanting was carried out in compartments 11, 12, 13, 17, 19 and 20. A number of tending jobs was also done and thinning and pruning work continued in the pine plantations in compartments 11, 12 and 15.

(iv) *Kowloon Hills Forest Reserve* (twelve compartments = 1,818 acres)

127 acres of pine, *Casuarina equisetifolia, Eucalyptus sideroxylon* and *Eucalyptus citriodora* were formed in compartment 11. Earlier plantations of pine and Casuarina were replanted.

(v) *Pat Heung Forest Reserve* (eleven compartments = 2,133 acres)

New planting of pine, *Melaleuca leucadendron, Tristania conferta, Acacia confusa, Cinnamomum camphora* and *Eucalyptus spp.* was carried out in compartments 2, 3, 4, 7, 8, 9 and 11 in which a total of 231 acres was planted. A large scale pine replanting was done in compartments 3, 4, 5, 6 and 7.

(vi) *Tai Po Kau Forest Reserve* (fifteen compartments = 1,108 acres)

Fifty four acres of pine were formed in the extension area immediately to the south of this reserve. A few small areas in compartments 4 and 10 were planted with *Cinnamomum camphora, Callitris spp.* and other broadleaved species. Pine replanting was done over about thirty five acres in compartments 1, 2, 3 and 5.

(vii) *Shap Long Forest Reserve* (six compartments = 1,862 acres)

650 acres of new planting were made in compartments 2 and 3 using Casuarina in compartment 2 and pine in compartment 3. Small trial planting of *Tristania conferta* and *Eucalyptus spp.* was carried out and a tending operation was started in the 1957 plantation. All the work was done using prison labour.

(viii) *Tai Tam Forest Reserve*

Sixty acres of pine were replanted on eroded patches in this catchment area and tending was carried out to last year's plantation. A three-acre Christmas tree plot was also formed.

FORESTRY LOTS

287. The plan of assistance in the planting of village forestry lots continued to progress. The object of this plan is to establish village plantations to provide initially a quick return of wood for fuel and poles and timber for the construction of farm buildings and eventually timber for sale. Combined with these is the more general aim of protection of the soil and conservation of water for agriculture. The villagers are generally ignorant of the principles of forestry and the first requirement is to teach them sound forestry technique and show them that a good financial return can be obtained from plantations. For this purpose the Forestry Division carried out experimental work in order to find tree species suited to the needs of village forestry. Model plantations have been made to demonstrate forestry methods to the villagers and under the forestry lot planting plan, small trial plantations are established at Government expense on the village lot

in order to demonstrate to the villagers the value of properly managed plantations.

288. During the year 597 acres of trial plantations (compared with 309 acres in the previous year) were planted and all previous years' plantations were tended and replanted where necessary. Most of the work was done in the Sai Kung and Castle Peak areas but interest in the plan is rapidly spreading to other districts as well. In the course of a few years it is hoped that all districts will take advantage of the assistance offered and plant up increasing acreages of forestry lots.

289. Pine was the main species established in most lots and it is now apparent that only tubed stock should be used in the outlying forestry lots where much handling is required. In East District the planting programme for the year was completed with particularly good results following the decision to concentrate entirely on tubed planting stock : the average survival was 85%.

290. Higher prices for firewood consequent upon a decrease in imports from China stimulated an interest in forestry lot plantings and also led to an increase in application for felling. In Sai Kung, in particular, many applications were received for the thinning out of the older trees for sale. Frequent thinning of already poor stands, however, impoverishes the forest, and it has been suggested by the Department that, instead of a general thinning, certain areas should be clear felled and replanted under supervision. In this way a greater return will be obtained and the plantations will be replaced by vigorous trees, which in due course will lead to very much higher returns. Most of the owners agreed to this and many applications have been received for clear felling. Permits were issued for the felling of a total of approximately 23,000 piculs of pine wood.

291. Planting plans for 1959 were drawn up, regular inspections were carried out, maps and records brought up to date and visits were made to encourage villagers to join the plan.

AMENITY PLANTING

292. Tending was extensively carried out to most of the old trees on the main roads in the New Territories and all dead and decayed ones were removed. Over 18,000 trees were planted for amenity purposes in the rural areas.

Forest Offences

293. A total of ninety seven persons were convicted for forestry offences as compared with twenty six in the previous year. Although these figures suggest a considerable increase, all the offences were of a trivial nature, and the increase was probably a result of the temporary low level of imports of firewood into the Colony due to the decline in imports from China noted above.

Fire

294. Fire was the major source of injury to plantations during the year. A total of 318 fires was reported and 158 acres of young plantations were burnt. From mid-October to the end of January the weather was unusually dry and some record low humidities were recorded. As a result the fire hazard was considerably higher than in average years. There were twenty three days of extreme fire risk during this period. If a fire breaks out when the hazard index is extreme it is almost impossible to control. At best it can only be contained in an area. Considering the high risk during the fire season and the large extent of plantations, the losses were not unduly high (2.3% of the whole planted area) although the sum total of damage was greater than in any season since the devastating fire at Shing Mun in January, 1955.

295. About twenty five miles of new fire barriers were made at Shap Long, Tai Lam, Pat Heung, Shing Mun, Kowloon Hills, Tai Po Kau and all existing fire barriers were re-cleared. Many grass areas adjacent to plantations were burnt early in the fire season to reduce the fire risk. To safeguard older plantations many of them were thinned and pruned up to about 4′. All fire control plans were revised prior to the onset of the fire season at the end of September and additional field telephones and cable were obtained to improve communications for rapid suppression of fire. A fire prevention notice was printed in English and Chinese explaining the main causes of hill fires and asking for public co-operation in preventing the outbreak of fires. Copies of this notice were distributed to people living in or near plantation areas and also to those entering plantations during the fire season.

COMMUNICATIONS AND BUILDINGS

296. During the year a headquarters unit was formed to increase efficiency and to deal with the planning, construction, and maintenance of roads and buildings. A Ferguson tractor was obtained for road

construction work. Telephones were installed at Castle Peak and Sai Kung district offices to improve inter-district communications and all district offices now have this important facility.

297. Existing paths in forest areas were maintained and a total of approximately eight miles of new forest paths was made at Pat Heung, Shap Long, Fu Shui and Shing Mun Forest Reserves. Short access roads were made to Tai Tam, Sha Tin, Castle Peak and Nam Shan nurseries. The Pat Heung access road was extensively repaired and widened.

298. In connexion with the expansion of forestry activities many new buildings were required; the following were completed during the year :

Tai Lam	— office, store and ranger's quarters
Pat Heung	— quarters and store
Fu Shui	— quarters and store
Wong Nei Chung	— two old military buildings converted to a store and quarters
Castle Peak	— senior staff hostel
Tai Lung	— senior staff hostel
Tai Lung	— two compost pits
Tai Lung	— timber seasoning shed
Sai Kung	— nursery glasshouse
Tai Tong	— prefabricated wooden quarters

Except for the two senior staff hostels which were erected by contract labour all building construction work was carried out departmentally. In addition to these major construction jobs many temporary structures were erected and all existing buildings maintained and repaired. The rented outpost at Ngau Chi Wan was discontinued. Electricity supply lines were installed to buildings at Shing Mun, Shap Long, Mt. Cameron, Chai Wan, Pok Fu Lam and Stanley and a tap water supply line was installed to the Aberdeen building.

TIMBER AND FUEL SUPPLY

299. A summary of the imports and exports of timber and fuel is given in Appendix 25. 'Export' in this context means re-export of imported timber as there is no export of locally grown timber. The Forestry Division continued to give help and advice to the local exporters and also inspected timber and issued Certificates of Freedom from Live Borers in the case of timber consigned to foreign markets which require such certificates. As already mentioned earlier in this Report during the latter part of 1958 firewood imports from China

became severely curtailed and the price in the Colony rose by several dollars per picul. To ease the fuel shortage the Division undertook thinning work in rather poor irregular plantations on Fanling Golf Course. 12,610 pieces of the larger sizes were delivered to the Government firewood depot at Lai Chi Kok and yielded 222½ tons of firewood after debarking and cross cutting. 1,620 piculs of small size timber were sold to a contractor.

RESEARCH AND STAFF TRAINING

300. The following work was undertaken during the year :

(i) *Forest Botany*

301. The arboretum at Tai Lung was re-organized and a number of additional species planted bringing the total to 140 species. A start was made on the planting of a bamboo collection by planting fourteen species in the arboretum. A start was also made in the preparation of herbarium material : eleven specimens of bamboo and thirty one of herbs and shrubs were collected. 500 duplicate herbarium sheets were received from the Gardens Division to form a Forestry Herbarium.

(ii) *Ecology*

302. Three Protected Vegetation Plots were started to study the natural vegetation under conditions of complete protection from fire and cutting.

(iii) *Silviculture*

303. In the nursery fertility project, three new species were obtained for trial as green manure crops :

Calopogonium mucunoides
Centrosema pubescens
Mucuna capitata

In particular the last species (Velvet Bean) has produced a very luxuriant cover and appears to be an excellent cover and green manure crop. Interesting results have been obtained by adding small quantities of chemical fertilizer to tubing soil. Application of 0.4 gm. per tube of nitrogen and phosphorous compounds has very obviously increased the height and vigour of growth of various species. Phosphorous has produced the most significant response, nitrogen only a slight response and potash no response. The soil conditioner, 'Krilium' has also been tried and an application of ½ lb. per 100 sq. ft. has greatly improved the soil condition.

304. Experiments were started to study the fertility levels of soils at Tai Lung Nursery. Compost experiments, use of plant containers of various materials and weed control investigations using chemical sprays or mineral oils were continued at Tai Lung Nursery. New fertilizer trial plots were established at Sai Kung, Pat Heung, Tai Lam and Fu Shui.

(iv) *Soil Erosion*

305. In the stream-flow and erosion study, three run-off plots were laid out and two stream-flow measuring weirs were completed by the Waterworks Office at Tai Lam Forest Reserve. Calibrated tanks were made to collect and measure all the water silt which run off these plots. In order to obtain suitable statistics of rainfall in the catchment areas being studied it has been decided to purchase a recording rain gauge which will provide information on the intensity of rainfall during storms.

(v) *Utilization*

306. An investigation on the drying of freshly cut pine thinnings was started in order to provide fairly accurate data on which to base firewood yields from plantations. Interesting facts which come to light are that bark accounts for 10% - 12% of the weight of small size pieces, peeled pieces dry eight times as quickly as unpeeled and unpeeled wood loses 40% of its weight through drying in one month. In split form the wood burns readily even at 80% - 90% moisture content. It is obvious then that where firewood is sold by weight there is a big loss if it is allowed to dry out too much before sale. This can be prevented to some extent by leaving the bark on until a short time before selling.

Staff Training

307. During August and September thirty seven selected sub-ordinates of the Forester and Forest Guard I grades underwent a training course on all branches of forestry work. The course was similar to that held last year but the period was increased from two weeks to three weeks to enable fuller instruction to be given with time for demonstrations and practical work. The men attended training in two groups separately in two three-week periods. In addition to study of forestry subjects, first aid demonstrations were given by members of the St. John Ambulance Brigade. In tests held at the conclusion of the course twenty students passed with 70% or more of the total marks, ten passed with 50% or more and seven failed (below 50%).

308. The Division continued to fell and prune trees in private compounds and to issue permits for the clearing of building sites, wood from these sources being sold by tender.

309. A total of 1,472 Christmas trees were sold to the public or supplied free of charge to charitable institutions.

PART 6

SOIL SURVEY AND LAND UTILIZATION

Officer-in-charge: Mr. C. J. Grant, M.A.—Soil Survey Officer

310. With the incorporation of the Survey Section with this Service work has now been broadened to include land utilization surveys, soil surveys and soil analysis.

311. Survey of all the soils in the Colony was completed in 1958 but in order that the final classification should not be too complicated it was necessary to review the intermediate soil types and to consolidate some of the variant soils of very limited extent into the general classification. Such a classification may be found at Appendix 26. Paddy and agricultural soils have been divided into eleven Soil Associations and each Association has one or more drainage series. Hill soils have been classified according to their parent rock and subdivided on the basis of their geomorphological situation. A full report on the soils is being prepared and will be published separately.

312. Detailed survey of the soils on Agricultural Stations was not possible in many cases because of the lack of accurate cadastral maps. The Survey Section has now obtained a Wild Tacheometer and has begun the detailed mapping of all the Agricultural Stations. The first two of these maps, for Ta Kwu Ling Agricultural Station and Sheung Shui Agricultural Station, have already been completed.

313. The Survey Team have been engaged on land utilization surveys and have produced detailed reports and maps on areas representative of each of the main types of farm economy. These reports will be incorporated in the final report on the soils of the Colony.

Analysis

314. The Soils Laboratory is fully equipped to deal with all of the main analyses that may be required in agricultural investigation, except the tracing of element identification. A spectrophotometer has been ordered to meet this requirement.

315. During the year the Laboratory analyzed 281 soil samples. Up to fifteen separate investigations are required for each sample.

TABLE 7

Analysis	*No. of Samples*
Texture	281
Moisture	281
Loss on Ignition	281
Total Nitrogen	281
pH Value	281
Available P_2O_5	174
Cation Exchange Capacity	30
Total Exchangeable Bases	30
Total Carbon	174
SiO_2	30
R_2O_3	30
Total Phosphorus	30
Total Soluble Salts	281

In the course of the year the Laboratory has been freely used by other sections of the Department for various analyses such as fish-pond water, nutritional values of fodder crops and fertilizer analysis.

Land Utilization

316. Latest information on Land Use in the Colony compared with the previous year is recorded at Appendix 27. Points of interest are:

(i) A total of 30,775 acres are devoted to cropping, a gain of 410 acres on the previous year.

(ii) There has been a reduction in the area under paddy by 140 acres.

(iii) The area under vegetables has increased by 290 acres.

(iv) The acreage under orchards has increased by 310 acres.

(v) There has been a small loss in field crop acreage of fifty acres.

(vi) The new area under crops includes 150 acres of previously abandoned land brought back to cultivation and 260 acres of newly opened land.

(vii) Area under forest increased by 2,127 acres to a total of 7,923 acres.

ACKNOWLEDGMENTS

317. It is with much pleasure that the following acknowledgments are made: to those members of the public and of the Services who served on the Agricultural Show Committee or otherwise assisted; to those members of the public who co-operated with the Forestry

Division in making the Annual Tree Planting week a successful event; to the many firms who supplied the Department with valuable information on their agricultural and livestock products; to Mr. Lawrence Kadoorie and Mr. Horace Kadoorie for their continued and ever increasing practical interest in the welfare of the people of the New Territories; to the United States, Netherlands and Japanese Consulates General and the Thai Consulate for making available technical information and statistics from their respective countries; to the Thai Government for making available at regular intervals important vaccines for the control of animal diseases.

318. Since this will be my last report before retiring from the Service, I would like to pay a special tribute to the staff of this Department for their loyalty and unstinting co-operation during a period of new policies and a considerable expansion of departmental services.

319. In particular I would like to express my appreciation of the services of my field staff of all Divisions who have with enthusiasm worked hard and well in the interests of the primary producer.

W. J. Blackie, M.Sc. (N.Z.),
F.R.I.C., F.N.Z.I.C.,
Director of Agriculture, Fisheries & Forestry.

September 1959.

APPENDIX 1

METEOROLOGICAL DATA 1958/59

Month	Temperature			Mean Relative Humidity	Total Rainfall in m.m.		Total Sunshine hours	
	Mean Max.	Mean	Mean Min.			Normals		Normals
	°F	°F	°F	%				
April, 1958 ...	80.2	74.7	71.4	85	48	136.2	167.8	113.5
May ,, ...	85.1	79.6	76.1	82	225.5	286.1	172.2	155.5
June ,, ...	86.8	81.3	77.6	83	243.6	388.3	174.7	160.5
July ,, ...	88.9	83.3	78.7	82	479.1	386.0	210.2	210.4
August ,, ...	87.6	81.9	77.8	82	174.6	363.3	226.6	201.1
September ,, ...	86.9	81.4	76.9	81	549.8	264.6	174.7	198.1
October ,, ...	81.0	75.3	70.6	69	47.6	111.2	226.1	216.7
November ,, ...	75.8	69.3	64.7	65	0.7	42.5	254.6	185.6
December ,, ...	71.5	64.5	59.6	69	4.9	26.2	246.8	171.5
January, 1959 ...	64.7	59.3	55.2	62	1.2	31.9	142.7	145.2
February ,, ...	67.1	62.9	59.8	89	210.2	44.6	27.6	98.1
March ,, ...	70.5	65.2	61.2	80	44.4	72.6	130.5	95.0
Mean	78.9	73.2	69.1	77	—		—	
Total	—	—	—	—	2,029.6		2,154.5	
NORMALS (1884-1939; 1947-1950)								
	76.7	72.0	68.4	78	2,152.8		1,951.7	

APPENDIX 2

PADDY PRODUCTION—5-YEAR RECORDS

Year	*Production (Piculs)*	*Estimated Money Value of* (1)
1954	429,780	$15,579,000
1955	464,013	18,752,000
1956(2)	442,152	17,686,000
1957	493,650	18,238,500
1958	545,628	22,271,000

Notes: (1) Calculated on ruling price of paddy for 2 crop seasons.
(2) Losses from typhoons.

ESTIMATED YIELD, VALUE AND CULTIVATED AREA OF PADDY IN THE COLONY, 1958

District	2-Crop Paddy					1-Crop Upland Paddy			1-Crop Brackish Water Paddy				Total		
		1st Crop		2nd Crop											
	Area in Acres	Yield in lbs.	Value in $ (@ $27 per 100 lbs.)	Yield in lbs.	Value in $ (@ $33.75 per 100 lbs.)	Area in Acres	Yield in lbs.	Value in $ (@ $27 per 100 lbs.)	Area in Acres	Yield in lbs.	* Yield rate per Acre lbs.	Value in $ (@ $27 per 100 lbs.)	Production lbs.	Value $	Area in Acres
Sha Tin ...	725	1,218,000	328,860	1,189,000	401,287.50	5	4,500	1,215	10	16,000	1,600	4,320	2,427,500	735,682.50	740
Tai Po & Sai Kung N. ...	2,255	3,788,400	1,022,868	4,059,000	1,369,912.50	10	9,000	2,430	—	—	—	—	7,856,400	2,395,210.50	2,265
Sheung Shui & Fanling ...	3,835	6,442,800	1,739,556	6,903,000	2,329,762.50	125	112,500	30,375	75	18,000	240	4,860	13,476,300	4,104,553.50	4,035
Sha Tau Kok ...	1,160	1,948,800	526,176	1,948,800	657,720.00	75	67,500	18,225	130	104,000	800	28,080	4,069,100	1,230,201.00	1,365
Kam Tin & San Tin ...	3,660	6,148,800	1,660,176	8,637,600	2,915,190.00	15	13,500	3,645	1,310	314,400	240	84,888	15,114,300	4,663,899.00	4,985
Castle Peak & Yuen Long ...	4,760	7,996,800	2,159,136	11,614,400	3,919,860.00	—	—	—	1,365	1,092,000	800	294,840	20,703,200	6,373,836.00	6,125
Tsuen Wan ...	130	218,400	58,968	213,200	71,955.00	5	4,500	1,215	—	—	—	—	436,100	132,138.00	135
Sai Kung S. & Hang Hau ...	1,100	1,848,000	498,960	1,980,000	668,250.00	5	4,500	1,215	20	32,000	1,600	8,640	3,864,500	1,177,065.00	1,125
Lantao Island ...	1,165	1,957,200	528,444	1,980,500	668,418.75	—	—	—	5	8,000	1,600	2,160	3,945,700	1,199,022.75	1,170
Other Islands ...	260	436,800	117,936	416,000	140,400.00	5	4,500	1,215	—	—	—	—	857,300	259,551.00	265
Total ...	19,050	32,004,000	8,641,080	38,941,500	13,142,756.25	245	220,500	59,535	2,915	1,584,400		427,788	72,750,400 or 33,008 Metric tons	22,271,159.25	22,210

* The irregularity in yield in districts caused by various degrees of blast attack on the crop.

APPENDIX 4

QUANTITY AND VALUE OF VEGETABLES PRODUCED IN THE COLONY AND SOLD THROUGH VEGETABLE MARKET

1957/58 v.s. 1958/59

Kind	1957/58		1958/59	
	* Yield in Catties	Value in $	* Yield in Catties	Value in $
Cabbage, Flowering	10,161,227½	2,142,730.52	14,739,522½	3,994,410.97
Cabbage, White	27,721,481½	3,533,171.05	29,697,026¼	4,808,302.82
Cabbage, Leaf Mustard ...	6,972,863¼	948,578.52	8,791,168¾	1,511,404.53
Kale, Chinese	5,336,548¾	1,002,770.90	6,578,336¾	1,832,335.64
Sweet Potato	2,226,669¾	349,426.35	2,343,963½	337,770.57
Tomato...	4,107,104	664,393.54	2,957,185¾	665,542.35
Water Cress	3,275,661¼	738,660.81	3,881,530½	1,096,029.87
Onion, Spring	2,223,767	649,900.99	2,557,488½	688,562.30
Turnip	5,130,406½	496,878.48	4,642,892¾	739,096.75
Lettuce, Chinese	5,708,462½	659,345.87	6,984,863	896,486.18
Spinach, Chinese	989,444	181,209.83	1,070,677	199,294.95
Spinach...	2,528,449½	479,005.94	3,481,972¾	746,633.37
Spinach, Water	3,515,700¾	550,397.14	4,416,289	488,209.47
Chinese, Chives	1,226,002½	338,689.97	1,870,958¼	464,689.28
Brinjal	823,840	193,878.91	1,145,233½	217,242.92
Cucumber	1,819,882¼	254,747.17	2,075,813¾	289,727.79
Bean, String	2,897,668¼	1,400,831.25	4,678,401¾	1,593,937.13
Yam Bean	542,101	95,302.13	453,771	68,909.31
Taro	640,971½	118,907.56	356,866	71,156.29
Miscellaneous	35,218,264¼	7,699,357.43	37,315,793¼	8,660,495.56
Total	123,066,516 or † 74,450.40 Metric tons	22,498,184.36	140,039,754½ or † 84,718.54 Metric tons	29,370,238.05

* 1 Catty equivalent to 1⅓ lb.

† 1 Metric ton equivalent to 1,653 catties.

APPENDIX 5

VEGETABLES GROWN IN THE NEW TERRITORIES, 1957/58 AND 1958/59

(Production By District)

	Districts	1957/58 (piculs)	1958/59 (piculs)
1.	Kowloon	56,361.42½	65,473.80
2.	Sha Tin	3,088.39½	2,977.57½
3.	Tai Po	92,925.97¼	97,159.00¼
4.	Fanling	340,960.93¼	393,659.36
5.	Sheung Shui	227,876.97¼	254,784.41¾
6.	San Tin	100,169.97¼	110,834.91½
7.	Yuen Long	102,213.57	106,909.75¾
8.	Kam Tin	102,254.04¾	130,394.55½
9.	Castle Peak	168,029.56½	201,074.35¼
10.	Tsuen Wan	36,784.30¾	37,129.81
	Total	1,230,665.16	1,400,397.54½

APPENDIX 6

FRUIT PRODUCTION (1958)

Name of Fruit Trees	No. of Plants	Quantity of Fruits (Catties)	Value of Fruit ($)
Sweet Orange	4,000	72,000	100,800.00
Tangerine...	17,000	340,000	442,000.00
Foreign Lemon	200	5,000	2,000.00
Local Lime	14,000	364,000	163,800.00
Pumelo	1,700	85,000	21,250.00
Mandarine	1,000	8,000	11,200.00
Calamondin (Mostly in pots)	1,700	6,800	6,800.00
Kumquat (Mostly in pots)	1,200	1,800	2,160.00
Wong Pei	7,500	165,000	132,000.00
Lychee	18,700	467,500	467,500.00
Longan	4,500	157,500	126,000.00
Papaya (ripe)	17,400	348,000	121,800.00
Guava	18,800	282,000	70,500.00
Banana	4,600	161,000	24,150.00
Chinese Olive	4,000	200,000	80,000.00
Carambola	1,100	16,500	6,600.00
Mango	850	42,500	25,500.00
Yanmin	370	66,600	26,640.00
Plum	350	8,750	1,750.00
Persimmon	360	13,680	4,104.00
Sandpear	100	3,500	1,050.00
Japanese Apricot	6,800	149,600	89,760.00
Peaches (Edible)	6,000	48,000	14,400.00
Pineapple...	100,000	150,000	60,000.00
Miscellaneous ... ... (Including Jackfruit, Loquat, Noble bottle trees, Rose Apple, Custard Apple, etc.)	12,500	18,750	7,500.00
Total	244,730	3,181,480	$2,009,264.00

EXPORT CROPS

No.	Crop	1957/58			1958/59		
		Quantity (Piculs)	Unit Price ($)	Amount ($)	Quantity (Piculs)	Unit Price ($)	Amount ($)
1.	Vegetable Seeds	111.62	500.0	55,810.00	13.40	200.00	2,680.00
2.	White Cucumber	436.33	18.8	8,192.35	487.63	11.20	5,461.83
3.	Bitter Cucumber	365.26	43.5	15,881.35	386.69	34.73	13,421.35
4.	Mushroom	28.77	451.7	12,995.25	44.46½	459.42	20,428.10
5.	Taro	1,659.13	25.1	41,678.37	1,358.59	26.33	35,765.27
6.	Ginger	3,011.80½	51.7	155,712.65	3,328.65½	38.64	128,639.34
7.	Lotus Root	807.69	31.7	25,602.92	456.00	45.19	20,609.45
8.	Lotus Seeds	69,920(fruit)	0.396	27,708.00	66,748(fruit)	0.30	20,024.40
9.	Yam	1,039.44	27.0	28,087.40	240.29	25.95	6,237.65
10.	White Cabbage	4,032.87	14.5	58,600.58	1,773.24	16.90	29,974.98
11.	Radish	757.42	15.2	11,518.62	310.86	18.22	5,664.00
12.	Turnip	2,961.07	19.5	57,865.34	1,182.62	25.47	30,120.24
13.	Mustard	476.45	13.0	6,200.61	889.53	16.61	14,777.60
14.	Waterchestnut	33,451.89	39.80	1,331,916.72	32,495.47	44.69	1,452,436.85
15.	Arrow Head	1,836.17	76.0	139,574.35	—	—	—
16.	Lychee	4,500.63	119.4	537,474.60	1,648.94	92.78	152,989.85
17.	Lemon	1,095.41	37.5	41,092.66	809.56	44.99	36,426.55
18.	Wong Pei	678.35	51.7	35,063.00	85.50½	46.94	4,013.25
19.	Japanese Apricot	1,703.18½	45.2	76,955.85	930.25	41.36	38,478.37
20.	Olive, White	1,600.76	25.6	41,017.64	335.17	37.25	12,487.80
21.	Olive, Black	633.68	43.9	27,824.35	189.29	55.22	10,453.05
	Total			$2,736,772.61			$2,041,089.93

Note: (1) The Quantity of each crop is based on the amount for which Certificates of Origin were issued.

(2) The Unit price is based on the average market price.

ANIMALS ADMITTED FOR SLAUGHTER

Animal Quarantine (Food Animals)

(*a*) *Imported Animals Admitted for Slaughter*

Source	*Swine*	*Cattle*	*Sheep*	*Goats*
China	728,976	101,073	—	11,718
Cambodia	31,595	1,256	—	—
Thailand	2,585	27,676	—	—
Taiwan	101,537	—	—	—
Australia	—	2,910	1,751	275
North Vietnam	1,104	—	—	—
Total	865,797	132,915	1,751	11,993

(*b*) *Local Animals Admitted for Slaughter*

Animal Depots	*Swine*	*Cattle*	*Sheep*	*Goats*
Urban	181,592	1,264	—	88
New Territories	131,507	3,665	—	—
Total	313,099	4,929	—	88

(*c*) *Imported and Local Animals Admitted for Slaughter*

	Swine	*Cattle*	*Sheep*	*Goats*
Grand Total	1,178,896	137,844	1,751	12,081

QUANTITY, VALUE AND AVERAGE WHOLESALE PRICES OF FISH MARKETED IN HONG KONG

	Fresh Fish			Salt/dried Fish			Total		
	Piculs	Value ($)	Average price ($) per picul	Piculs	Value ($)	Average price ($) per picul	Piculs	Value ($)	Average price ($) per picul
1946/47	36,539	3,400,439	93	216,976	16,256,905	75	253,515	19,657,344	78
1947/48	58,660	4,133,624	70	197,811	10,339,470	52	256,471	14,473,094	56
1948/49	139,686	10,223,243	73	257,762	12,869,533	50	397,448	23,092,776	58
1949/50	201,802	20,430,850	101	278,898	20,282,397	73	480,700	40,713,247	85
1950/51	307,284	25,740,401	84	190,174	10,802,599	57	497,458	36,543,000	73
1951/52	376,930	31,291,369	83	126,650	8,570,925	68	503,581	39,862,294	79
1952/53	446,494	30,518,212	68	134,174	7,366,214	55	580,668	37,884,426	65
1953/54	441,960	36,459,313	82	111,636	8,426,428	75	553,596	44,885,741	81
1954/55	588,058	34,649,538	59	98,631	4,804,276	49	686,689	39,453,814	57
1955/56	572,194	33,350,140	58	89,968	3,854,090	43	662,162	37,204,230	56
1956/57	608,058	43,288,974	71	88,788	4,521,485	51	696,846	47,810,432	69
1957/58	714,948	44,828,392	63	89,296	3,869,681	43	804,244	48,698,073	61
1958/59									
April	75,647	4,521,553	60	6,870	240,123	35	82,517	4,761,676	58
May	55,600	3,306,549	59	15,745	242,987	15	71,345	3,549,536	50
June	46,255	3,181,718	69	2,556	123,670	48	48,811	3,305,388	68
July	48,822	2,959,589	61	3,243	131,037	40	52,065	3,090,626	59
August	49,807	3,598,733	72	5,954	221,353	37	55,761	3,820,086	69
September	40,621	3,107,672	77	4,903	194,418	40	45,524	3,302,090	73
October	40,995	3,159,328	77	7,586	295,000	39	48,581	3,454,328	71
November	56,037	4,261,900	76	6,560	432,300	66	62,597	4,694,200	75
December	74,727	5,211,528	70	10,675	510,788	48	85,402	5,722,316	67
January	61,021	5,419,821	89	8,121	454,588	56	69,142	5,874,409	85
February	43,649	3,632,535	83	3,236	150,962	47	46,885	3,783,497	81
March	64,061	5,691,986	89	4,237	265,340	63	68,298	5,957,326	87
Total	657,242	48,052,912	73	79,686	3,262,566	41	736,928	51,315,478	70

APPENDIX 10

SUMMARY OF PRIMARY PRODUCTION

(NEAREST $1,000)

Item	*Value 1956/57 $*	*Value 1957/58 $*	*Value 1958/59 $*	*Remarks 1958/59*
Paddy	17,686,000	18,239,000	22,271,000	1st Crop $36 per picul. 2nd Crop $45 per picul.
Vegetables* ...	24,506,000	25,004,000	32,634,000	Records of Marketing Dept.+value of produce consumed by 50,000 New Territories families estimated 3,264,000.
Fruit	1,242,000	1,496,000	2,000,000	Increasing production. Price relatively stable.
Sweet Potatoes ...	6,132,000	6,425,000	6,400,000	
Export Crops ...	2,885,000	2,736,000	2,041,000	Exported under Certificate of Origin.
Rice Straw	210,000	309,000	309,000	
Poultry*	12,666,000	4,000,000	19,489,000	Includes consumption by N.T. farmers, estimated at 1,889,000.
Eggs	1,000,000	200,000	2,583,000	Great increase in local breeding.
Ducks	1,295,000	2,505,000	6,072,000	Great increase in local breeding.
Duck Eggs	—	--	566,000	Not previously recorded.
Pigeons	225,000	875,000	336,000	Lower production (see 1957/58).
Quail	17,000	19,000	7,000	Decreasing production.
Quail Eggs	—	—	67,000	Not previously recorded.
Geese	245,000	160,000	795,000	Large increase in numbers.
Geese Eggs	—	—	69,000	Not previously recorded.
Pigs*	32,023,000	26,666,000	40,886,000	Including pigs consumed by farmers and fishermen from unlicensed killings. Estimated at $4,106,000.

APPENDIX 10—*Contd.*

Item	*Value 1956/57 $*	*Value 1957/58 $*	*Value 1958/59 $*	*Remarks 1958/59*
Cattle	2,612,000	1,869,000	2,376,000	Based on actual numbers. Average weight 260 catties at $2 per catty.
Fresh Milk	8,217,000	10,900,000	10,822,000	Hong Kong, Kowloon and New Territories dairies.
Misc. Animal Products	—	—	7,401,000	Not recorded in previous years.
Marine Fisheries* ...	63,746,000	64,930,000	58,369,000	Market Figures + 10% eaten by fishermen + 15% landed in China.
Fresh Frozen Shrimp	1,604,000	4,603,000	7,538,000	Expanding production.
Pond Fish	1,400,000	1,700,000	1,450,000	Relatively stable.
Oyster and Oyster Sauce	1,280,000	1,750,000	1,500,000	Relatively stable.
Fresh Shrimp ...	23,000	48,000	61,000	Exported under Certificate of Origin.
Silver Shrimp ...	21,000	87,000	38,000	Poorer year.
Spotted Fish ..	91,000	153,000	107,000	Poorer year.
Fan Mussel	200,000	112,000	92,000	30,050 catties. Decreasing production.
Cultured Pearls ...	20,000	-		Pilot Scheme 1956/57. Commercial production 1959/60.
Forest Products ...	89,000	41,000	423,000	Sale of decayed and overmature camphor trees and firewood.
Total	$179,435,000	$174,827,000	$226,702,000	

* *Note:* Owing to the difficulty of securing reliable figures on farmers and fishermen consumption a flat figure of 10% has been adopted. Studies by the Department indicate that this is close to the actual figure but on the low side. For comparative purposes values provided in the two previous years have been corrected on vegetables, poultry, pigs and marine fish.

RABIES CONTROL

A. Dog Inoculation and Licensing

	Hong Kong	Kowloon	N.T.	Total
Inoculated and licensed ...	1,992	2,015	8,115	12,122
Licensed only	1,530	1,055	5,263	7,848
Total	3,522	3,070	13,378	19,970

B. Observation and Stray Animals

(Admissions and Disposals in the four Government Kennels)

Observation	Dogs	Cats	Monkeys	Pigs	Buffalo
Remaining in Kennels on 31st March, 1958	32	1	—	1	—
Admitted during the year ...	1,564	82	17	5	1
Returned to owners	1,216	37	16	6	1
Destroyed	293	42	1	—	—
Died in Kennels	19	4	—	—	—
Adopted by new owners ...	38	—	—	—	—
Remaining in Kennels on 31st March, 1959	30	—	—	—	—
Stray					
Remaining in Kennels on 31st March, 1958	4	2	—	—	—
Admitted during the year ...	750	13,901	3	—	—
Returned to owners	405	3	1	—	—
Destroyed	319	13,895	2	—	—
Died in Kennels	12	5	—	—	—
Adopted by new owners ...	16	—	—	—	—
Remaining in Kennels on 31st March, 1959	2	—	—	—	—

C. Dog Control Unit

	Total Stray Dogs Found	Found licensed & Returned to Owners	Unlicensed & Returned to Owners after Licensing	Unclaimed & Destroyed
1st Quarter	345	150	97	98
2nd „	410	283	83	44
3rd „	597	443	118	36
4th „	360	282	67	11
Total	1,712	1,158	365	189

APPENDIX 12

STATISTICS OF ANIMALS, BIRDS, REPTILES AND ANIMAL PRODUCTS INSPECTED AND CERTIFIED FOR THE YEAR 1958/59

Animals	*No.*
Dogs	245
Cats	7
Monkeys	1,988
Gibbons	185
Elephants	6
Camels	2
Lions	2
Leopards	2
Orang-utans	2
Raccoon	1
Squirrels	2
Pigs	7
Total	2,449

Birds	
Cage Birds	163,945
Quail	400
Pigeons	818
Total	165,163

Reptiles	
Crocodiles	48
Pythons	20
Turtles	6,390
Total	6,458

Description of Commodity	Wt. in lb.	Average Price/lb. $	Total Value $
Cattle hides	1,842,441	1.90	3,500,638
Horse hides	17,010	1.20	20,412
Sheep and goat skins	13,064	4.00	52,256
Deer skins	10,385	3.50	36,347
Hide cuttings	1,422,244	0.22	312,894
Bristles	24,002	25.00	600,050
Raccoon hair	900	95.00	85,500
Goat hair	5,176	15.00	77,640
Pen wool	5,858	20.00	117,160
Horse tail hair	5,832	4.00	23,328
Mis. animal hair	2,087	10.00	20,870
Feathers	570,523	2.50	1,426,307
Bone meal	881,840	0.14	123,458
Cattle horn and hoofs	1,340,084	0.35	469,029
Cattle bones	1,504,196	0.10	150,420
Deer horn	704	160.00	112,640
Rhinocerous horn	297	90.00	26,730
Gallstones	27	1,000.00	27,000
Lard	9,317	1.50	13,975
Preserved meat	14,005	5.00	70,025
Mis. dried sea food	4,469	3.00	13,407
Mis. frozen meat	30,984	3.00	92,952
Frozen prawns	11,505	2.50	28,726

Total weight: 7,716,950 lbs.; total value: $7,401,764; yielding a revenue of $18,662.50.

NEW TERRITORIES SLAUGHTERHOUSES

Yuen Long and Tai Po Slaughterhouses Slaughter Figures

Slaughterhouse	*Swine*	*Cattle*
Yuen Long	47,771	2,106
Tai Po	97,022	3,255
Total	144,793	5,361

Slaughterhouse	Swine			Cattle		
	Local	Mainland	Taiwan	Local	Mainland	Thailand
Yuen Long	41,632	1,683	4,456	1,073	924	109
Tai Po	89,902	3,814	3,306	2,577	453	225
Total	131,534	5,497	7,762	3,650	1,377	334
Grand Total ...	144,793			5,361		

Diseases Involving Total Condemnation in Yuen Long and Tai Po Slaughterhouses

Disease	*Swine*	*Cattle*
Swine Fever	97	—
Swine Erysipelas	3	—
Septicaemia	49	1
Jaundice	18	1
Cysticercus Cellulosae	4	—
Gangrene	—	1
Emaciation (pathological)	—	1
Total	171	4

APPENDIX 14

AUSTRALIAN CATTLE

Lantao Australian Cattle Depot and Slaughterhouse

(1) *Admissions*

Date Arrived	*Cattle*	*Buffaloes*		*Total*	*Deaths at Sea*
29/12/58	612	53	=	665	1
25/1/59	678	41	=	719	1
25/2/59	726	—	=	726	3
21/3/59	800	—	=	800	nil
Total	2,816	94		2,910	5

(2) *Slaughter Figures, etc.*

Month	*Slaughtered*	*Passed*	*Rejected*	*Died in Lairages*
January	615	607	8	95
February	589	575	14	26
March	1,126	1,123	3	9
Total	2,330	2,305	25	130

(3) *Rejection of Dressed Carcases*

Generalized Tuberculosis	1
Septicaemia	2
Bruising, extensive and severe	16
Fever	3
Emaciation, pathological	3
Total	25

(4) *Rejection of Offal, Meat Parts, etc.*

Lungs: Pneumonia 38 Pleurisy 70 Localized Tuberculosis 50 Abscesses 45.
Liver: Cirrhosis 9 Abscesses, etc. 6.
Heart: Pericarditis 7.
Head and Tongue: Localized Tuberculosis 20.
Spleen: Congestion 150.
Meat Parts: Bruising 364 lbs. Onchocerciasis 30 lbs.
Slinks: 167.

Minor rejection figures for such diseased conditions as Mastitis, Metritis, Nephritis, Hydronephrosis and Intestinal Enteritis were recorded.

Total weight of rejected carcases slinks, offal and meat parts amounted to approximately 17,830 lbs.

Estimated weight of 130 dead animals amounted to 70,000 lbs.

APPENDIX 15

LIVE AND RETAIL SWINE AND CATTLE PRICES (PER PICUL) DURING THE YEAR 1/4/58—31/3/59

Date	Swine				Cattle	
	Imported		Local		Live	Retail
	Live $	Retail $	Live $	Retail $	$	$
6/4/58	165	300	165	300	200	300
8/4/58	160	300	160	300	240	340
6/5/58	—	—	—	—	190	320
27/5/58	165	300	165	300	180	300
15/6/58	165	300	165	300	170	280
31/7/58	165	300	165	300	150	280
30/8/58	165	300	165	300	170	300
30/9/58	160	300	160	300	150	280
30/10/58	160	300	160	300	170	280
30/11/58	160	300	160	300	160	280
16/12/58	165	280	165	280	155	280
17/12/58	175	300	175	300	155	280
18/12/58	180	300	180	300	160	280
21/12/58	190	340	205	340	160	280
31/12/58	195	380	250	380	170	280
1/1/59	200	400	250	400	190	300
2/1/59	200	440	255	440	200	320
4/1/59	200	440	270	440	200	320
6/1/59	210	440	280	440	220	340
7/1/59	220	440	270	440	230	360
12/1/59	230	440	280	440	230	360
17/1/59	225	440	270	440	240	360
27/1/59	225	380	220	380	260	380
31/1/59	210	380	190	380	240	360
7/2/59	200	380	190	380	200	360
28/2/59	195	340	195	340	200	320
5/3/59	210	340	220	340	200	320
11/3/59	210	360	240	360	220	340
12/3/59	215	400	255	400	250	360
21/3/59	220	420	270	420	250	360
31/3/59	215	380	220	380	250	380

ESTIMATED NUMBER OF FISHING JUNKS (INCLUDING MECHANIZED VESSELS) AND OPERATIVE FISHERFOLK IN THE COLONY DURING 1958 TO 1959

Type of Vessel	Aberdeen		Shau Kei Wan		Cheung Chau		Tai O		Tai Po		Tap Mun		Kat O		Stanley		Castle Peak		Sai Kung		Sha Tau Kok		Yau Ma Tei		Fishing Companies		Total	
	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk	Vessels	Fisherfolk
Liners																												
Big Long Liner ...	13	585	54	2,430	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	45	—	—	68	3,060
Medium Long Liner ...	28	448	46	736	—	—	2	32	—	—	—	—	—	—	—	—	6	96	11	176	—	—	2	32	—	—	95	1,520
Small Long Liner ...	393	2,751	266	1,862	117	819	56	392	50	350	6	42	—	—	4	28	64	448	108	756	2	14	20	140	—	—	1,086	7,602
Hand Liner	170	850	180	900	123	615	60	300	225	1,125	68	340	50	250	115	575	270	1,350	79	395	60	300	50	250	—	—	1,450	7,250
Seiners																												
Ku P'eng	6	48	—	—	6	48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12	96
Pa T'eng	8	224	2	56	33	924	5	140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	56	—	—	50	1,400
Purse Seiner	344	3,096	183	1,647	135	1,215	5	45	143	1,287	74	666	169	1,521	123	1,107	142	1,278	168	1,512	80	720	125	1,125	—	—	1,691	15,219
Trawlers																												
Companies Trawler ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20	300	20	300
Deep Sea Trawler ...	76	1,520	140	2,800	24	480	—	—	—	—	—	—	—	—	—	—	42	840	—	—	—	—	20	400	—	—	302	6,040
Inshore Trawler ...	204	3,060	126	1,890	14	210	3	45	—	—	—	—	—	—	—	—	237	3,555	—	—	—	—	56	840	—	—	640	9,600
Shrimp Trawler ...	510	3,060	127	762	66	396	30	180	58	348	—	—	—	—	—	—	192	1,152	2	12	—	—	13	78	—	—	998	5,988
Gill Netters																												
'Big Tail' Junk ...	514	4,112	117	936	230	1,840	221	1,768	1	8	—	—	—	—	—	—	272	2,176	126	1,008	—	—	200	1,600	—	—	1,681	13,448
Hok Lo T'eng ...	82	656	30	240	—	—	—	—	491	3,928	—	—	—	—	5	40	8	64	30	240	125	1,000	—	—	—	—	771	6,168
Fish Collectors	52	416	22	176	9	72	3	24	—	—	1	8	—	—	2	16	20	160	—	—	—	—	1	8	—	—	110	880
Miscellaneous	62	310	50	250	—	—	—	—	65	325	31	155	10	50	—	—	224	1,120	—	—	5	25	—	—	—	—	447	2,235
Total	2,462	21,136	1,343	14,685	757	6,619	385	2,926	1,033	7,371	180	1,211	229	1,821	249	1,766	1,477	12,239	524	4,099	272	2,059	490	4,574	20	300	9,421	80,806

Remarks: Includes 9 British registered (steel) trawlers.

MONTHLY LANDINGS (IN PICULS) BY THE FOUR MAIN CATEGORIES OF VESSELS

	1957/58					1958/59				
	Mechanized Fleet				Sailing Junks	Mechanized Fleet				Sailing Junks
	Trawler Companies	Native Type	Foreign Landings	Sub-Total		Trawler Companies	Native Type	Foreign Landings	Sub-Total	
April	8,863	37,099	67	46,029	32,763	6,980	43,393	310	50,683	31,834
May	6,849	36,967	590	44,406	23,574	5,613	42,910	33	48,556	22,789
June	8,425	31,182	1,271	40,878	19,581	4,673	23,836	—	28,509	20,302
July	5,738	30,291	742	36,771	20,195	5,067	28,875	—	33,942	18,123
August	6,082	25,560	1,216	32,858	18,773	5,110	26,482	989	32,581	23,180
September ...	7,029	28,479	1,221	36,729	16,992	2,862	24,124	86	27,072	18,452
October	6,319	37,500	427	44,246	26,075	2,463	18,710	—	21,173	27,408
November ...	8,303	44,867	—	53,170	29,264	2,493	27,762	—	30,255	32,342
December ...	9,511	45,905	—	55,416	24,707	6,097	45,160	185	51,442	33,960
January ...	7,301	40,414	—	47,715	18,614	5,675	40,043	1,176	46,894	22,248
February ...	8,327	31,624	186	40,137	12,007	7,368	28,528	395	36,291	10,594
March	10,941	53,091	287	64,319	19,025	7,046	38,888	294	46,228	22,070
Total (Piculs) ...	93,688	442,979	6,007	542,674	261,570	61,447	368,711	3,468	453,626	283,302
Percentages ...	11.65%	55.08%	0.74%	67.47%	32.53%	8.34%	52.75%	0.47%	61.56%	38.44%

Remarks: 'Foreign landings' mean the controlled landings of Japanese fish.

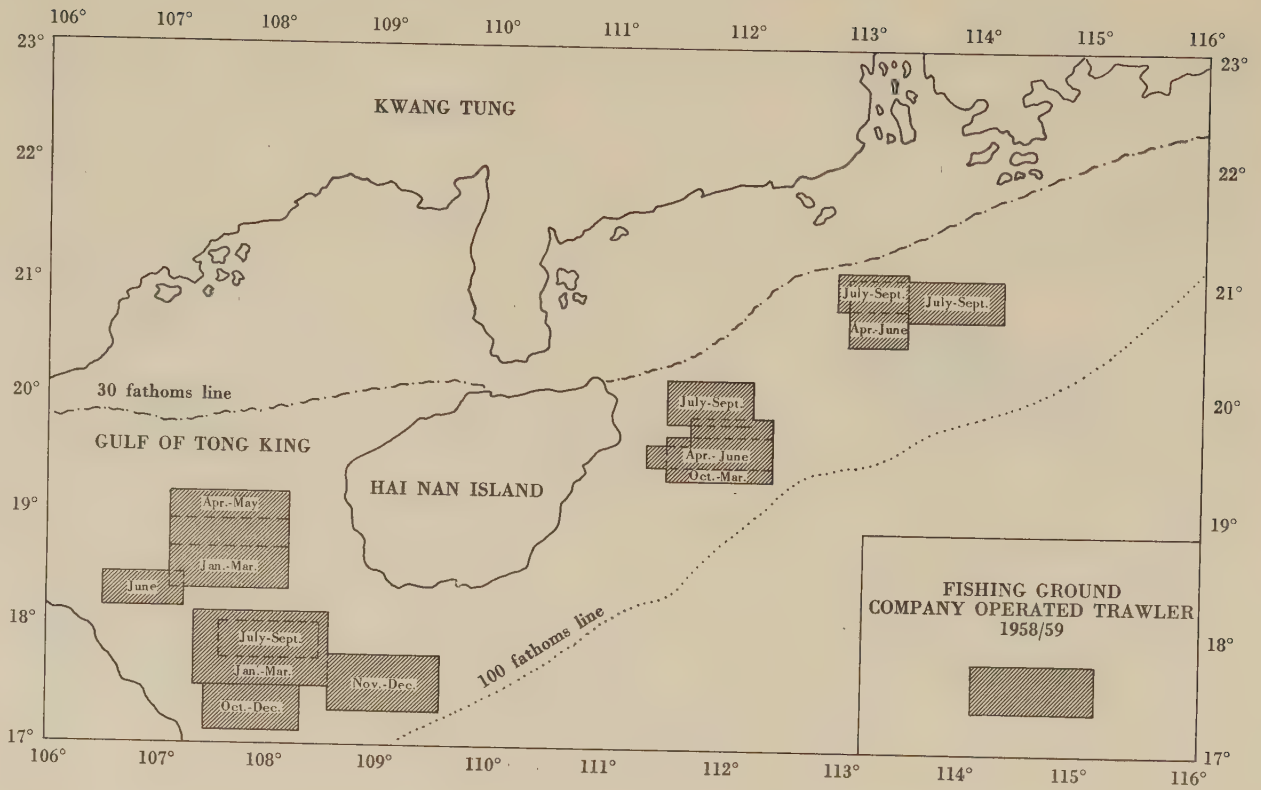
During the year April 1957 to March 1958 the mechanized fleet expanded from 1,524 to 2,287 vessels, an increase of 763. Figures for 1958/59 were 2,287 to 2,366 an increase of 79.

APPENDIX 18

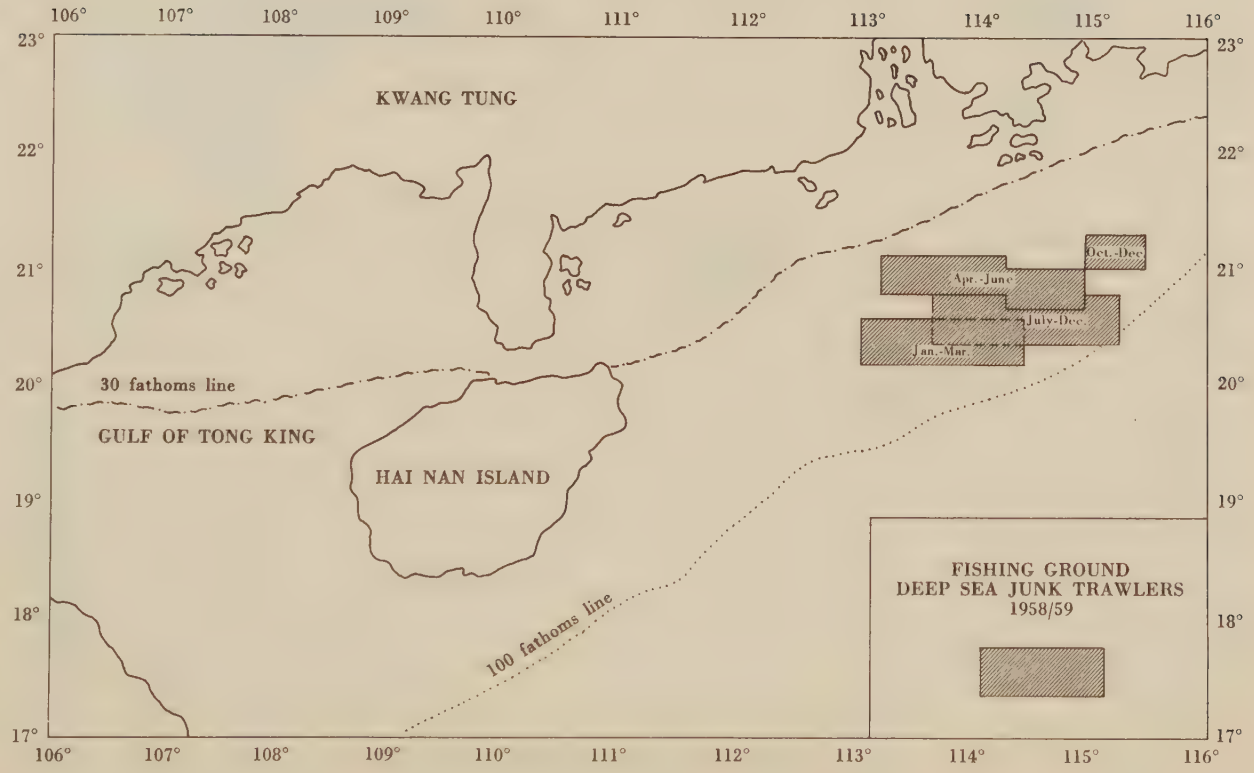
LANDINGS OF THE MAIN SPECIES OF FISH MARKETED IN 1958/59 AND FIGURES FOR THE SAME SPECIES DURING THE PREVIOUS YEAR

English and Chinese Names	Scientific Name	Landings in Piculs		Difference	
		1957/58	1958/59	Piculs	%
1. Golden Thread (Hung Sam 紅衫)	Synagris virgatus (Houttuyn)	108,426	115,898	+ 7,472	+ 6.4%
2. Conger Pike (Moon Sin 門鱔)	Muraenesox arabious (Bloch and Schneider)	40,721	35,544	— 5,177	— 12.7%
3. Lizard Fish (Kau Kwun 狗棍)	Saurida tumbil (Bloch)	39,105	35,625	— 3,480	— 8.9%
4. Red Sea Bream (Poh Lap 波鮶)	Taius tumifrons (Schlegel)	35,754	26,851	— 8,903	— 24.9%
5. Anchovies (Kung Yue 公魚)	Stolephorus sp.	33,038	9,587	— 23,451	— 71.0%
6. Red Snapper (Hung Yue 紅魚)	Lutjanus erythropterus	32,101	20,439	— 11,662	— 36.3%
7. Melon Seed (Kwa Vat 瓜核)	Psenopsis anomala (Schlegel)	30,901	9,818	— 21,084	— 68.2%
8. Mackerel Scad (Tse Yue 鰶魚)	Decapterus lajang (Bleeker)	28,379	12,807	— 15,572	— 54.9%
9. Carangoid Fish (Tse Tsai 鰶仔)	Carangidae sp.	24,563	26,635	+ 2,072	+ 8.4%
10. Croaker (Wak Yue 鰐魚)	Argyrosomus sp.	24,333	17,315	— 7,018	— 28.8%
11. Horse Head (Ma Tau 馬頭)	Branchiostegus Japonicus (Houttuyn)	18,128	27,608	+ 9,480	+ 52.3%
12. Mackerel (Kaau Yue 鮫魚)	Cybium sp.	16,903	16,370	— 533	— 3.2%
13. Yellow Croaker (Wong Fah Yue 黃花)	Pseudosciaena crocea (Richardson)	16,366	12,026	— 4,340	— 26.5%
14. Snapper (Lap Yue 鮶魚)	Pagrosomus major (Schlegel)	16,183	12,989	— 3,194	— 19.7%
15. Red Goat Fish (Hung Sin 紅線)	Upeneus moluccensis (Bleeker)	16,092	11,027	— 5,065	— 31.5%
16. Big Eyes (Muk Min 木棉)	Priacanthus tayenus (Richardson)	14,510	19,700	+ 5,190	+ 35.8%
17. Hair Tail (Taai Yue 帶魚)	Trichiurus Haumela (Forskal)	14,186	17,748	+ 3,562	+ 25.1%
18. White Herring (Tso Paak 鰣白)	Ilisha elongata (Bennett)	12,166	15,808	+ 3,642	+ 29.9%
19. Shark (Sah Yue 沙魚)	Elasmobranchs	12,041	14,232	+ 2,191	+ 18.2%
20. Cuttle Fish (Muk Yue 墨魚)	Sepia sp.	9,602	20,215	+ 10,613	+ 110.5%
21. Macao Sole (Ta Sa 撻沙)	Cynoglossus macrolepidotus	8,252	9,732	+ 1,480	+ 17.9%
22. Golden Sardine (Wong Chak 黃澤)	Sardinella aurita (Cuv. & Val.)	7,900	4,737	— 3,163	— 40.0%
23. All Other Species		244,594	244,217	— 376	— 2.0%
	Total	804,244	736,928	— 67,316	— 8.4%

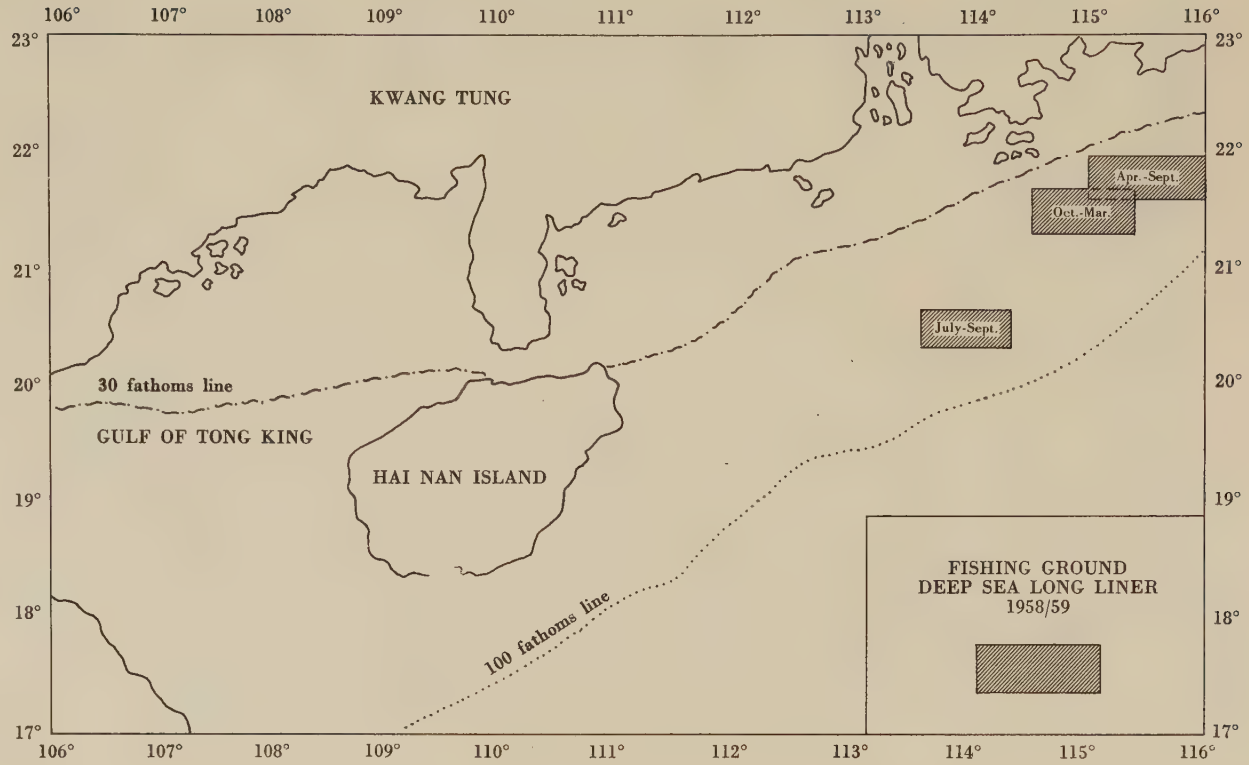
DISTANT WATER FISHING GROUND DURING 1958/59



MAIN FISHING GROUND DURING 1958/59
OF THE MECHANIZED 'DEEP SEA' JUNK TRAWLERS



MAIN FISHING GROUND DURING 1958/59
OF THE MECHANIZED 'DEEP SEA' LONG LINERS



APPENDIX 22

HONG KONG MECHANIZED FISHING VESSELS AND CHANGES DURING 1958/59

	Type of Vessel	Total end of March 1958	Changes		Total end of March 1959
			Increase	Decrease	
Trawlers	Company operated British registered (steel) trawlers	9	—	—	9
	Company operated Primitive & Japanese type trawlers	10	2	1	11
	Native type deep sea trawlers	76	5	4	77
	Shrimp trawlers	280	38	15	303
	Native type inshore trawlers...	192	28	4	216
Liners	Native type deep sea long liners	66	3	1	68
	Native type inshore long liners	734	40	30	744
	Native type hand liners	55	6	1	60
Seiners	Native type inshore purse seiners	634	25	16	643
	Pa T'eng...	49	—	2	47
	Ku Peng T'eng...	12	—	—	12
Misc.	Native type inshore gill netters	82	16	5	93
Collectors	Native type fish collectors	88	1	6	83
	Total...	2,287	164	85	2,366

APPENDIX 23

DIESEL ENGINES INSTALLED BY FISHING VESSELS DURING 1958/59

Trade Mark	Number of Engines			Horse-Power	
	New	Old	Total	Range	Most popular Rating
(A) *British*					
'Gardner'	10	57 *	67	19 -152	60
'Lister'	4	3	7	18 - 35	18
'Fowler'	—	6	6	10 - 11	11
'A. E. C.'	—	1	1	77	77
'Ailsa Craig'	—	2	2	20	20
'Petter'	3	3	6	5 - 20	10
'Kelvin'	—	1	1	88	88
'Ruston'	—	5	5	15 -100	22½
'Dormans'	—	2	2	11 - 12	12
'Parsons'	—	1	1	36	36
Total	17	81	98		
(B) *American*					
'Cumins'	1	—	1	125	125
'Hercules'	—	4	4	27 -160	27
Total	1	4	5		
(C) *Swedish*					
'Bolinder'	1	2	3	10 - 32	23
(D) *Danish*					
'Bukh'	1	1	2	10 - 20	10
'Calmo'	2	—	2	10	10
Total	3	1	4		
(E) *German*					
'M. W. M.'	1	1	2	22 - 44	22
'Guldner'	—	3	3	30 - 32	32
'Bauscher'	2	1	3	6 - 8	6
Total	3	5	8		
(F) *Belgian*					
'La Meuse'	1	1	2	12	12
(G) *Japanese*					
'Daiya'	10	8	18	5 - 17	7
'Yanmar'	13	10	23	4 - 30	4
Others	—	2	2	150 -160	150
Total	23	20	43		
Grand Total	49	114	163		

* Most of these were lorry and bus engines converted for marine use. 163 fishing boats were mechanized in 1958/59.

DATA CONCERNING NEWLY-BUILT MECHANIZED FISHING JUNKS REGISTERED DURING THE YEAR 1958/59

Type of Junk		Deep Sea Trawler	Inshore Trawler	Shrimp Trawler	Shrimp Trawler (Modified Type)	Big Long Liner	Medium Long Liner	Small Long Liner	Hand Liner	Purse Seiner	Gill Netter	Fish Collector
No. of Junk		3	11	13	2	2	2	23	2	13	7	1
Reg. Length (L)	Min.	74′– 3″	37′– 2″	27′– 0″	54′– 4″	64′– 3″	41′– 9″	22′–10″	17′– 5″	21′– 6″	25′– 0″	26′– 9″
	Max.	74′– 8″	53′– 0″	48′– 4″	54′–10″	69′– 0″	47′– 8″	36′–10″	25′– 0″	43′– 6″	33′– 3″	26′– 9″
	Aver.	74′– 5″	47′– 6″	39′–11″	54′– 7″	66′– 7″	44′– 8.5″	28′– 4″	21′– 2.5″	30′– 6″	28′– 3″	26′– 9″
Reg. Breadth (B)	Min.	23′– 9″	11′– 8″	9′– 8″	13′– 8″	22′– 6″	16′– 9″	8′– 4″	6′– 2″	9′– 0″	9′– 5″	9′– 8″
	Max.	24′– 9″	17′– 6″	16′– 3″	13′– 9″	23′– 2″	17′– 4″	13′– 5″	8′–11″	13′– 9″	11′– 4″	9′– 8″
	Aver.	24′– 1″	14′– 9″	13′– 4″	13′– 8.5″	22′–10″	17′– 0.5″	11′– 4″	7′– 6.5″	10′– 4″	10′– 5″	9′– 8″
L / B Ratio	Min.	74.25 / 24.75 = 3.00	48.50 / 16.67 = 2.91	30.42 / 11.75 = 2.59	54.33 / 13.67 = 3.97	64.17 / 23.17 = 2.77	41.75 / 17.33 = 2.41	23.83 / 9.58 = 2.49	23.00 / 8.92 = 2.80	21.50 / 9.00 = 2.39	29.42 / 11.33 = 2.60	26.75 / 9.67 = 2.77
	Max.	74.67 / 23.75 = 3.14	46.42 / 11.67 = 3.98	48.00 / 14.50 = 3.31	54.83 / 13.75 = 3.99	69.00 / 22.50 = 3.07	47.67 / 16.75 = 2.85	35.50 / 11.75 = 3.02	17.42 / 6.17 = 2.82	43.50 / 12.75 = 3.41	33.25 / 10.83 = 3.07	26.75 / 9.67 = 2.77
	Aver.	74.42 / 24.08 = 3.09	47.50 / 14.75 = 3.22	39.92 / 13.33 = 2.99	54.58 / 13.71 = 3.98	66.58 / 22.83 = 2.92	44.71 / 17.04 = 2.62	28.33 / 10.33 = 2.74	21.20 / 7.54 = 2.81	30.50 / 11.08 = 2.75	28.25 / 10.42 = 2.71	26.75 / 9.67 = 2.77
Reg. Capacity (Piculs)	Min.	2,604	325	153	709	1,961	653	92	35	95	117	153
	Max.	2,712	1,025	694	726	2,200	810	366	117	473	240	153
	Aver.	2,657	684	472	718	2,081	732	182	76	232	174	153
	Total	7,972	7,526	6,141	1,435	4,161	1,463	4,185	152	3,017	1,217	153
Main Engine Horse Power	Min.	152	60	7	100	108	60	4	4	4	6	15
	Max.	152	72	60	100	152	60	35	7	60	20	15
	Aver.	152	61	44	100	130	60	13	5.5	19	10	15
	Total	456	672	572	200	260	120	297	11	250	71	15
Cost of Wooden Hull	Min.	$ 58,000	$ 3,350†	$ 1,050	$23,000	$ 52,500	$10,500	$ 1,200	$ 700	$ 1,300	$ 2,000	$2,000
	Max.	65,000	13,400*	8,200	23,000	54,000†	13,600	5,820†	2,300	7,700	4,200†	2,000
	Aver.	60,333	7,455	4,842	23,000	53,250	12,050	2,629	1,500	3,962	2,800	2,000
	Total	$181,000	$82,000	$62,950	$46,000	$106,500	$24,100	$60,460	$3,000	$51,500	$19,600	$2,000
H.P. / Capacity Ratio (H.P./Pic.)	Min.	152 / 2712 = 0.056	60 / 1025 = 0.059	7 / 162 = 0.043	100 / 726 = 0.138	108 / 1961 = 0.055	60 / 810 = 0.074	5 / 144 = 0.035	7 / 117 = 0.060	4 / 153 = 0.026	8 / 218 = 0.037	15 / 153 = 0.098
	Max.	152 / 2604 = 0.058	60 / 325 = 0.185	36 / 234 = 0.154	100 / 709 = 0.141	152 / 2200 = 0.069	60 / 653 = 0.092	10 / 92 = 0.109	4 / 35 = 0.114	60 / 473 = 0.127	20 / 185 = 0.108	15 / 153 = 0.098
	Aver.	152 / 2657 = 0.057	61 / 684 = 0.089	44 / 472 = 0.093	100 / 718 = 0.139	130 / 2081 = 0.062	60 / 732 = 0.082	13 / 182 = 0.071	5.5 / 76 = 0.072	19 / 232 = 0.082	10 / 174 = 0.057	15 / 153 = 0.098
Cost / Capacity Ratio ($/Pic.)	Min.	58,000 / 2656 = 21.8	3,350 / 455 = 7.4†	1,050 / 153 = 6.9	23,000 / 726 = 31.7	52,500 / 2200 = 23.9	10,500 / 653 = 16.1	2,200 / 312 = 7.1	2,300 / 117 = 19.7	1,300 / 117 = 11.1	2,600 / 218 = 11.9	2,000 / 153 = 13.1
	Max.	65,000 / 2712 = 24.0	10,600 / 740 = 14.3	2,300 / 162 = 14.2*	23,000 / 709 = 32.4	54,000 / 1961 = 27.5†	13,600 / 810 = 16.8	2,650 / 117 = 22.6	700 / 35 = 20.0	3,900 / 150 = 26.0†	4,200 / 196 = 21.4†	2,000 / 153 = 13.1
	Aver.	60,333 / 2657 = 22.7	7,455 / 684 = 10.9	4,842 / 472 = 10.3	23,000 / 718 = 32.0	53,250 / 2081 = 25.6	12,050 / 732 = 16.5	2,629 / 182 = 14.4	1,500 / 76 = 19.7	3,962 / 232 = 17.1	2,800 / 174 = 16.1	2,000 / 153 = 13.1

† Made in China.

* Made in Macau.

IMPORTS AND EXPORTS OF TIMBERS AND FUEL FOR THE YEAR ENDED 31ST DECEMBER, 1958

Category	Gross Imports		Gross Exports		Net Imports		Percentage by value of gross imports or exports from or to different sources or destinations	
	Hundred of Cu. ft.	Value $	Hundred of Cu. ft.	Value $	Hundred of Cu. ft.	Value $	Imports	Exports
TIMBER								
(A) *Round:*								
1. Teak	2,055	2,947,387	233	325,594	1,822	2,621,793	North Borneo (British) ... 52%	U.S.A. ... 25%
2. Primary Hardwood	2,454	1,364,076	547	823,487	1,907	540,589	Thailand ... 17%	United Kingdom ... 21%
3. Secondary Hardwood ...	21,857	6,287,768	1,122	628,759	20,735	5,659,009	Burma ... 14%	Australia ... 18%
4. Light Hardwood	62,376	14,932,536	1,747	561,548	60,629	14,370,988	China 10%	China 14%
5. Softwood (conifer)	2,321	990,527	76	33,295	2,245	957,232	Other Sources. 7%	Macau... ... 13%
6. Timber for match-making ...	—	—	—	—	—	—		Other Destinations ... 9%
7. Poles, Pilings & Posts ...	760	243,842	—	—	760	243,842		
8. Decorative Wood	751	968,151	111	185,905	640	782,246		
(B) *Sawn:*								
9. Teak	6,019	8,849,358	94	263,373	5,925	8,585,985		
10. Primary Hardwood	4	14,391	3	2,995	1	11,396		
11. Secondary Hardwood ...	10	3,358	1,297	1,044,662	—	—		
12. Light Hardwood	2,646	963,297	6,498	5,650,301	—	—		
13. Softwood	10,137	4,314,928	9	5,944	10,128	4,308,984		
14. Decorative Wood	137	251,461	7	14,193	130	237,268		
Total Timber	111,527	42,131,080	11,744	9,540,056	104,922	38,319,332		
FUEL	Cwt.	Value $	Cwt.	Value $	Cwt.	Value $		
(A) Firewood	2,353,428	7,564,170	41,616	154,045	2,311,812	7,410,125	China ... ... 76% Malaya ... 12% Borneo, British 11% Other Sources. 1%	Macau... ...100%
(B) Charcoal...	1,297,278	10,216,506	23,553	260,602	1,273,725	9,955,904		
Total Fuel...	3,650,706	17,780,676	65,169	414,647	3,585,537	17,366,029	Malaya ... 70% China 30%	Macau... ... 97% Other Destinations ... 3%

CLASSIFICATION OF PADDY SOILS

Parent Materials		Associations	Series				
Parent Rock	Nature of Material		Freely Drained	Imperfectly drained	Poorly drained	Very poorly drained	Saline
Tai Mo Shan Porphyries and Volcanics	In Situ	Castle Peak		×	×	×	
	In Situ and Boulder Fan...	Castle Peak B		×	×		
	Boulder Fan	Sek Kong	×	×	×		
	Boulder Fan ... ... (Enriched by more recent alluvium)	Lam Tsuen	×	×	×		
	Colluvial and Alluvial Fan.	Sun Hing	×	×	×		
	Alluvial	Chik Nai Ping	×	×	×	×	×
Lok Ma Chau (Metamorphosed Pat Sin)	Alluvial and Colluvial ...	Mai Po	×	×	×	×	×
Granite	Alluvial and Colluvial ...	Sha Tin		×	×	×	×
	Mangrove Swamp Alluvial.	Fanling		×	×		
	Sea Sand						
	Recent Alluvium						

CLASSIFICATION OF HILL SOILS

	Skeletal In Situ		Colluvial		Eroded	Mixed Bottom Land
			Bouldery	Non Stony		
Granite	×	×	×		×	
Porphyries	×	×	×	×		×
Volcanics	×	×		×		
Sedimentaries	×	×		×		×

LAND UTILIZATION 1959

	Rice Land			Vegetable Land	Orchard	Field Crop Land	Abandoned Land	Total
	2-crop Paddy Land	1-crop Brackish Water Paddy Land	1-crop Upland Rice Land					
Sha Tin	725	10	5	190	230	30	190	1,380
Tai Po & Sai Kung North ...	2,255	—	10	500	510	210	440	3,925
Sheung Shui & Fanling ...	3,815	75	105	1,280	115	650	205	6,245
Sha Tau Kok	1,160	130	75	60	10	350	325	2,110
Kam Tin & San Tin	3,650	1,310	15	480	110	300	235	6,100
Castle Peak & Yuen Long ...	4,740	1,365	—	720	350	1,075	285	8,535
Tsuen Wan	130	—	5	360	30	60	115	700
Sai Kung South & Hang Hau	1,095	20	5	120	10	260	265	1,775
Lantao Island	1,100	5	—	70	35	130	295	1,635
Other Islands	260	—	5	125	15	300	105	810
	18,930	2,915	225	3,905	1,415	3,365	2,460	33,215 acres
Afforested land including Government Plantations and Forestry lots planted from 1953								7,923 ,,
Total								41,138 ,,

Code No.: 3022—59